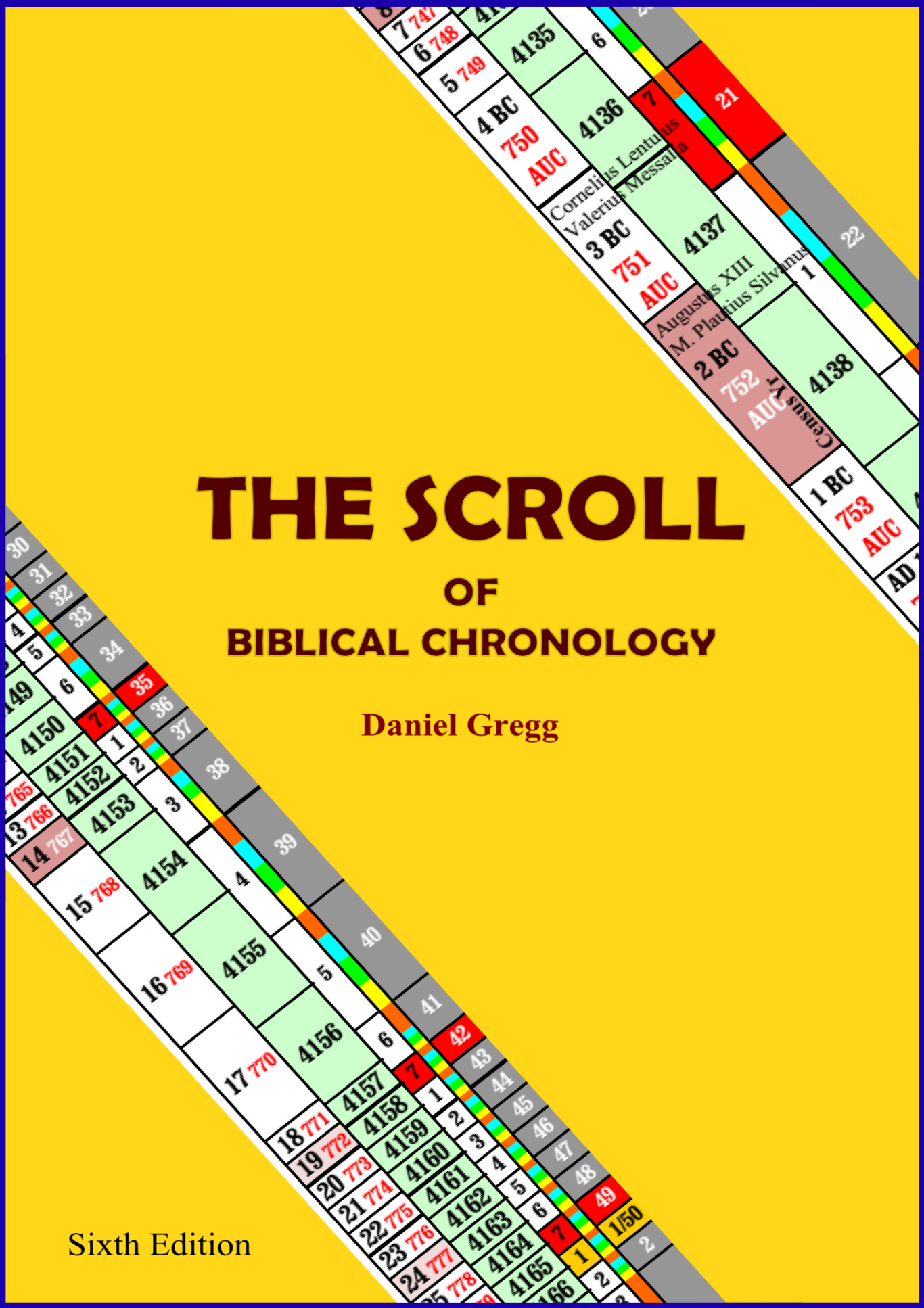


THE SCROLL

OF BIBLICAL CHRONOLOGY

Daniel Gregg

Sixth Edition

Figure 1: Passion Chronology Chart

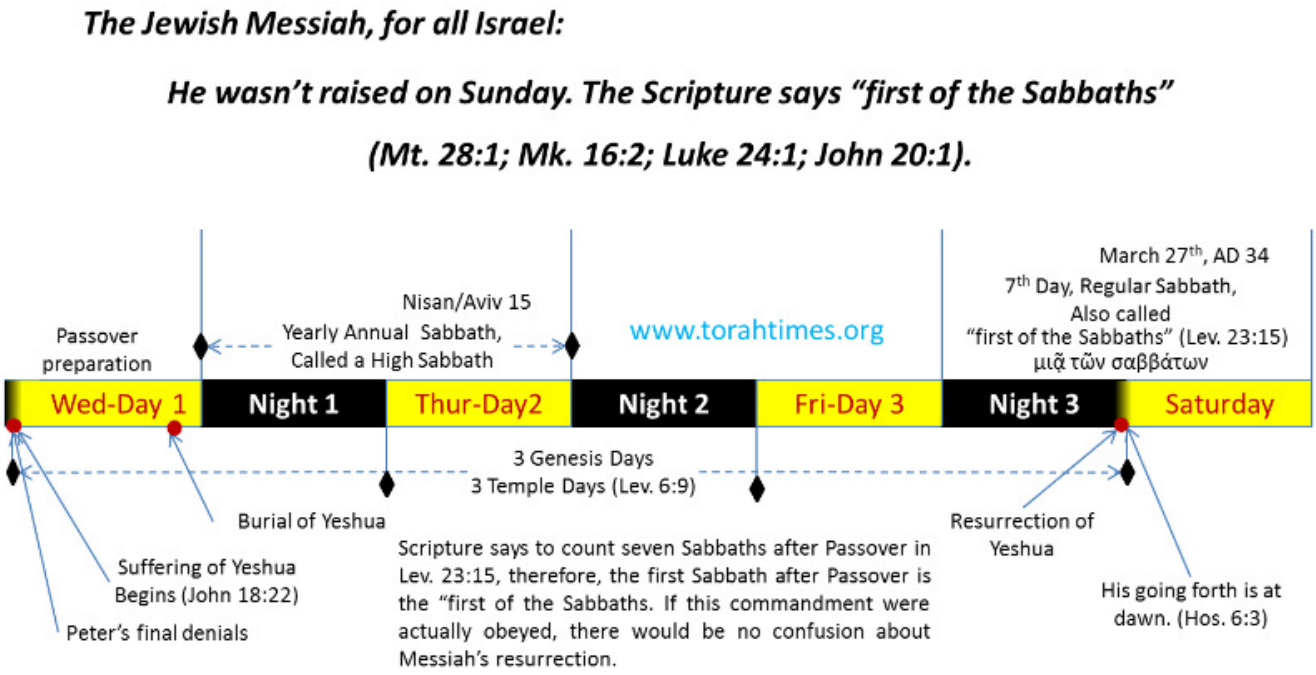
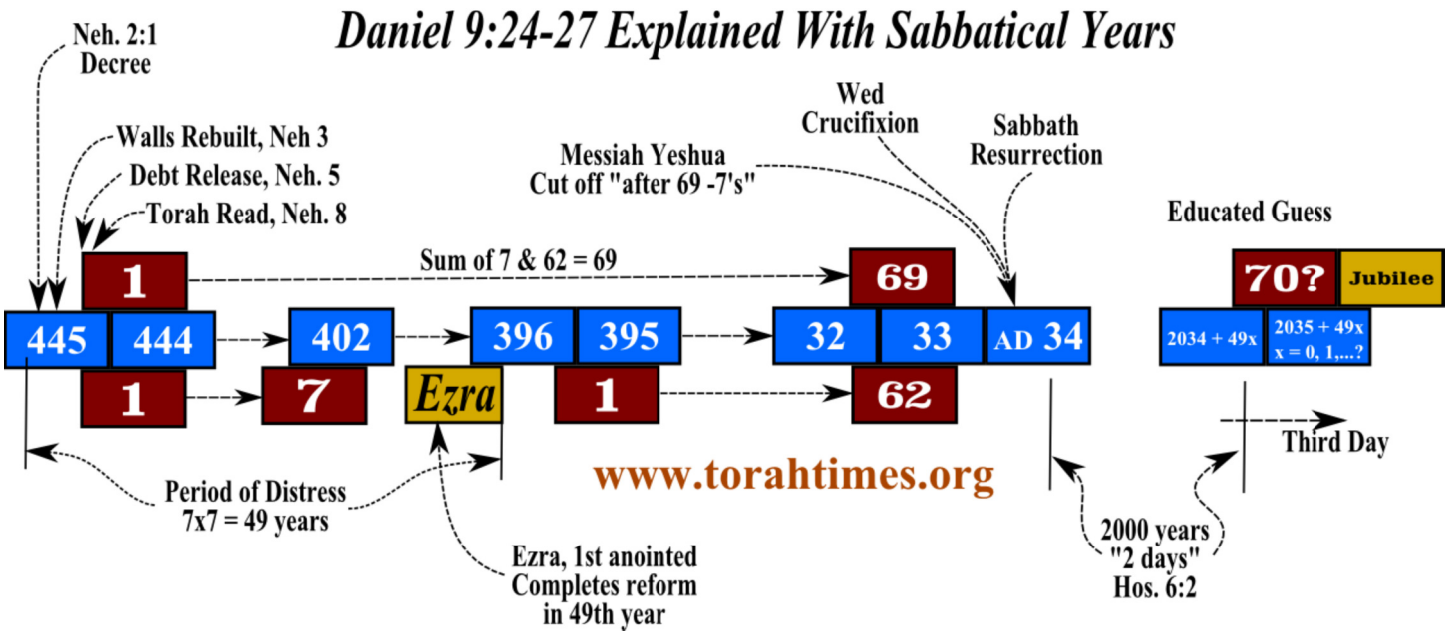


Figure-2 : Daniel 9:24-26



קוּמָה יַהוָה וְיָפֻצוּ אֹיְבֶיךָ וְיָנֻסוּ מְשַׂנְאֶיךָ מִפָּנֶיךָ

Arise O Yăhweh and let Thine
enemies be scattered
And let them that hate Thee flee from Your Face

These are the days of Eliyah
Declaring the Word of Yăhweh

And these are the days of Your servant Mosheh
Righteousness being restored

And though these are days of great trials
Of famine and darkness and sword
still we are the voice in the desert crying
Prepare ye the way of Yăhweh.

Behold He comes riding on the clouds
Shining like the sun at the trumpet call

Lift your voice it's the year of Jubilee!
Out of Tziyon's hill salvation comes

And these are the days of Yehezqael
The dry bones becoming as flesh

And these are the days of Your servant Dauid
Rebuilding the Temple of Praise

And these are the days of the harvest
The fields are white in the world

And we are Your laborers in Your vineyard
Declaring the Word of Yăhweh.[1]

1"Days of Elijah" by Robin Mark, © 1996 Daybreak Music Ltd (with minor changes). Hebrew verse: Num. 10:34.

The Scroll of Biblical Chronology

Mapping The Times And Seasons Of The Holy Scriptures

All Rights Reserved, Sixth Edition Ebook

**Reproduction or copying to third parties prohibited.
Respect the author's right to make a living.
Buyers are granted permission to use on computers they own.
Further details at www.torahtimes.org. This ebook is not encrypted,
and proper use depends on the integrity of the buyer.**

Editions: 1st 2007, 2nd 2009, 3rd 2011, 4th , 5th 2012
6th edition ebook, 2014

By Daniel Gregg, B.S.C.S.

To Order This Book See Website:

www.torahtimes.org
daniel@torahtimes.org

Write:

Daniel Gregg
1956 Lobdell Point Road
Washington Island, Wisconsin
54246

Table of Contents

Mapping the Highway of Biblical Time 8
- In The Beginning 9
- Creation and Six Days Earth-Normal Time 9
- Stellar Chronology 9
- The Definition of "Day" and the Day of Rest 10
- The Date of Creation 11
- Creation in the spring 11
- Adam 11

The Flood to the Exodus 13
- The New Moon and the date of Creation 13
- The Spring Equinox and the date of Creation 14
- The Months of the Flood Year 14
- The Tower of Babel 15
- Archaeological Finds 17
- Abraham 18
- Four Hundred Years 19
- The Descendants of Isaac 19
- Seven Year Cycles 20

Calculating The Exodus Year 22
- Which Way Signs Point 24

From Egypt To Mt. Sinai 25
- Farming and Fallow Cycles Begin 28
- Crossing the Jordan 28

The Bridge Over Joshua's Long Day 30
- Legends of Joshua's Long Day 32
- Other Possible Astronomical Discontinuities 33
- The Middle Chronology vs. Astronomical Dating 35
- The Dynasty of Sargon of Akkad 36
- The Eclipse in the land of Uta-rapashtim 36
- Chinese Chronology 41
- Is Amar-Sin the Biblical Amraphel? 43

The Shulgi Ballad Double Eclipse 46
- The Year of Puzur, Son of Nur 50
- The 1638 solution and Joshua's long day 51
- Lunar Month Matching 51
- Month Matching with the Venus Observations 52
- A Solar Eclipse Attending the Fall of Babylon 53
- The Ugarit Eclipse And the Sea People 55
- Just how valid is radiocarbon dating? 57

Tree Ring Chronologies 58

Other Radio-Isotope Dating Methods 59
Ice Core Dating 59
Seven Years Conquering The Canaanites 63
Conquering Heshbon And Jepthah's 300 Years 63
The Days of Joshua 63
Servitudes and Judges 64
The 450 Years of Acts 13:20 65
Calculating Samuel's Years 65
The Jubilee of Saul's Second Year 66
Astronomical Synchronism: David Flees from Saul 67
Another Jubilee Synchronism 68
A Weekday-Astronomical Synchronism 69
Reign Years of the Kings of Judah and Israel 69
Hezekiah's Jubilee Synchronism 69
Israel becomes 'Not My People" 70
Egyptian Chronology from Shoshenq I 71
Assyrian Chronology from Shalmaneser III 72
Josiah to Jehoiachin, Kings of Judah 74
Seventy Sabbatical Years And the Babylonian Exile 75
The Babylonian Exile 75
Darius the Mede 77
Review of the Exile 78
Biblical Identifications of Persian Kings 79
Events of Esther 79
Jewish Surnames 79
The Work of Ezra The Scribe 80
Introduction to Daniel 9:24-27 82
Daniel 9:24-27 82
Are Discontinuous Eras with Gaps Possible? 83
How Seven Year Cycles Are Counted 83
The Text 84
The Decrees 84
The Seven Sevens 84
The Sixty-Two Sevens 85
The Birth of Messiah 85
The Crucifixion Year 86
Workings of the Hebrew Calendar 86
The Date of the Crucifixion 89
Matthew 12:40 89
Mathew 28:1 90
Leviticus 23:11-16 90
Luke 24:21 90
John 20:1 91

Mark 16:1-2 91
Luke 23:54-24:1 91
The Length of Yeshua's Ministry 91
The Third Day 92
The Final Week, Day by Day 93
A Forty Year Tradition 95
Burial Procedures 96
The First Fruits or Wave Offering 96
The Time of Day of the Resurrection 96
The Chronology of Paul 98
The Punishments of Israel 99
Jewish Eras and the Sabbatical Year 99
Calculating the Sabbatical Year 100
Other Historical References to the Sabbatical year 101
The Siege of Beth Zur 101
The Murder of Simon 101
Herod's Conquest of Jerusalem 102
Caligula's Statue 102
The 2nd Year of Nero 102
The Bar Kochba Revolt 102
Zoar Tombstones 102
The End of Days 103
Daniel's 70th Seven 103
Is Messiah Coming Soon? 106
The Resurrection Scorecard 107
The Criteria 107
Day and Week in the Resurrection Passages 111
Passover Table from Finegan's Handbook 112
Exodus Week Detail, Aviv 14-16 113
Appendix I: Terah-Abraham 114
Appendix II: Fine-Tuning the Judges 116

Mapping the Highway of Biblical Time

Sacred times in the Bible are the pillars of biblical chronology and the spirit of prophecy by which we can verify that God's word is true. They support a unique highway by which we can walk the ages of history from the creation of the world to the New Jerusalem. This highway of time is utterly unique because God designed it, and he invites us to inspect it and thereby confirm his Word. When we studiously confirm his words, then we will be better able to trust Him so that our faithfulness may not fail in the hour of testing.

David L. Cooper, a pastor and biblical chronologist, with a love for Israel, who lived through the last world war, compared bible chronology to a suspension bridge — a causeway bridging a chasm. Beneath the bridge lies bottomless chaos of eonian myth and legend. Amid this chaos, the true ancient history of the world outside of the Scripture lies in tatters and ruins. This non-biblical chronology is secular chronology. The secular chronology is alive in the present, and continues intact for the last two thousand years. What came before is the result of forensic reconstruction. And the smell of death still lingers on it. As we proceed backward, the decay, confusion, and chaos only increase. Beyond the Neo-Babylonian Empire, the secular chronology is still dead. Chronologists have been unable to agree on it, but work feverishly to revive it.

In contrast, the biblical chronology is alive and well. Sadly, however, many Christians believe that scriptural chronology is just as dead as the smashed remains of tablets from Akkad and Sumer. We hear of gaps, apparent contradictions, and insoluble conundrums. It is just a pile of bones they say. They think to themselves that it was never intended to be solved. They look into the Scripture and fail to see that it has more chronological data than any other ancient source in the world. The figures look as if they were meant to be complete. But when they fail to verify for themselves that the figures are complete, they conclude that the Scripture is no better than archaeologists trying to reconstruct a list of Assyrian year names into a complete chronology from a collection of broken tablets. Them bones are too dry, they say, they will never be revived. I think they should have more faith, and not give up so easily after their human efforts prove fruitless. I don't mean faith in their ability to solve the problem, I mean faith that a solution exists!

There are reasons that the Scripture appears to be a pile of bones. Firstly, no one has ever taught them the solutions. Secondly, their own efforts have failed, however little they are. Thirdly, it takes a lot of effort to overcome active and widespread efforts that discredit the Scripture, and this latter point includes a multitude of utterly fraudulent solutions purporting to uphold Scripture, and prove it, and quickly straying into eschatological speculation. A fraudulent solution is one wherein the teacher has contrived a solution that appears correct to the audience, and is only superficially verified, leaving severe problems unaddressed. The optimistic fraud is just as effective as the pessimistic conclusion in keeping people from the solution.

Besides these reasons, there are several other reasons that tower high above the others. One is that solving problems like this requires prayer. A willingness to hear the answer, even if it contradicts previously held conclusions, is needed. Finally, for what I believe are very good reasons, the Scripture presents us with a number of ciphers which have to be solved. The purpose of the ciphers is to mislead those who approach the Scripture with the wrong worldview and the wrong attitude toward God. Or perhaps to put it more mildly, the ciphers are included to disfavor anyone with the wrong worldview, or with the wrong ambitions such as the promoters of fraudulent solutions, as foundations for speculative eschatology. It is near impossible for such persons to solve the ciphers, because tradition leads away from the correct solutions, the solutions require prayer, and a God willing to answer the prayer for the person seeking. Tradition leads away from the solution because the majority make up the tradition, and the majority disfavors the real solution when it crosses their path, since it usually contradicts some assumption they just feel is right, and most certainly because tradition is very much a synthesis of past frauds that were successful.

Here is a listing of ciphers to be solved:

How Adam's age is counted.
Noah's 600th year.
The age of Terah at Abraham's birth.
Seven years of famine in Egypt.
The meaning of the 480th year.
No sum of years for the Elders.
No sum of years for Samuel.
The location of 390 years of sin.
The location of 40 years of sin.
Jubilee allusions.
Where is the 70 year exile?
The family names in Ezra-Nehemiah.

This list is by no means comprehensive. Ciphers are not meant to be insoluble. You simply have to know their secret, and such secrets can only be discovered by knowing God and trusting his word. I know it is a catch-22, kind of like begging the question or circular reasoning. But people have experimented with trusting Him not knowing if they could and have discovered that He comes through every time.

This is a bridge that is unique, as it can be traveled in two directions. The past we see clearly, but the bridge continues toward the end of days with a light blowing fog shrouding our view. This is the wind of prophecy, bearing witness to Messiah Yeshua,[2] hinting where we are destined to go, and exhorting us not to abandon the way. When fulfilled, its flawless predictions reason with us to continue the path.

It is a solid bridge. The engineer built it well, and it will spare the traveler the mortal hazards of the dark and rocky crags below. At least, in going forward, if one cannot see too clearly, the road ahead is level and there is the firm guardrail at each side to guide our unclear vision.

Having been down the bridge behind us, we are confident that it will point the way to the holy mountain, wherein the King will dwell in the height of Zion. We walk past the supports, which are the Sabbatic and Jubilee years; we observe the regular spacing that keeps the smaller structures in place. We observe the golden roadway sections and subsections: days, months, and years. It is a bridge built in time from eternity to eternity.

---

2 Hebrew for *Christ Jesus*. Daniel 9:24-27 contains the essence of the spirit of prophecy, which is the testimony of Yeshua. See Revelation 19:10.

In The Beginning

Genesis means "beginning" and is taken from the first word of the Bible, *Beraesheet* (בְּרֵאשִׁית). The Scripture is unique in that it is concerned with the finite chronology of the created world. The universe is not some eternal divine cosmic consciousness that evolved over eons of time. Rather, it is the specially created masterpiece of the one and only eternal Almĭghty. Therefore, its chronology is limited in time. Genesis begins, "In the beginning of the Almĭghty's creating of the heavens and the earth....",[3] so it is not teaching an absolute beginning of time, but a beginning of God's creative activity for this creation.

Christians often fall prey to secular evolutionary teaching and eastern religious ideas about the chronology of the world. In order to elevate the creation above the Creator, these philosophers attribute time without end to the created world as one of the main supports for their deified yet godless universe. In pursuit of this goal, they have summoned or subverted the aid of the government to their cause, and have falsely called it science. Having gained the upper hand by trickery, deceit, and fallacious arguments, they are now in control of the public institutions, the entertainment industry, and the organs of debate.

However, the Bible has not been left without a defense. Creation scientists have risen up to challenge the evolutionary worldview. They value divine revelation more than the eonian chronological speculations of evolutionists. For the fear of Yăhweh is the beginning of wisdom. Beginning with the divine revelation, creation scientists have discovered in their researches remarkable confirmations of the biblical chronology. Having embraced the truth, they have discovered the real truths of science wherever they have the power to research. Indeed, creationists have uncovered many facts that have tipped the controversy in favor of the Bible's short chronology of the world.

Controversies are sure to arise because the Bible is a religious book, and evil naturally wishes to controvert the good, the true, and the straight. One thing that the mind of man finds hard to grasp is the ferocity with which evil fights against real truth and tries to destroy it via controversy. The irrationality of evil has no rational explanation. There is no diplomacy with it, but it must be refuted and then ignored until the Almĭghty judges it. God's people must not be taken aback by its appeasing overtures. They must choose to trust the Scriptures.

Moreover, God will not leave these forces in control of the world for long. While we wait for him to act, he has promised to preserve the truth among the remnant of his people. The goal of this book is to make a contribution to the preservation of the truth. Its task is to put many controversies to rest, to solve numerous puzzles, and ascertain the divine prophetic intent. The task is to point out and explain the parts of the highway of time that may be unclear. I will start with the creation of the world and describe chronology from that point step by step up to the events that will surround the Second Coming of Messiah Yĕshua, and the coming day when He will not only be glorified with the name above all names, but it will be acknowledged that He is the first and the last, and that besides him there is no Creator. To him every knee will bow, and every tongue confess that Yĕshua is Lord of lords and King of kings, to whom we owe all worship, honor, glory, and power.

3 The first word is normally a construct in Hebrew, "beginning of." The verb must be pointed *bero* as an infinitive construct to comply with Gen. 2:4, 5:1, and the syntax of 1:1-1:2.

Creation and Six Days Earth-Normal Time

God created the heavens and the earth in six days and rested on the seventh (Exodus 20:11). "Six days shall you labor … but the seventh day is the Sabbath … because in six days Yăhweh made the heavens and the earth." The reason given for man working six days only, and resting the seventh, is that God worked for six days and rested on the seventh. This reasoning requires six literal days for creation.

Many have thought there was a gap in vs. 2 or that the "days" represent "ages"; however, there is no allowance for a gap. The earth did not become waste and wild by a chaotic destruction, but it, and the starry heavens, were created very good in six days. Very good does not allow for chaos, death, or destruction in the creation account. In fact, God had Moses emphasize the very good nature of creation to counter the pagan myths based on the chaos of warring gods. Likewise, it does not allow for death-selection by evolution in the supposed gap. For evolution is the modern analogue of the pagan Babylonian creation myths. Both teach the chaos of survival of the fittest, where fittest means biggest, baddest, and strongest. But it was not so before the fall of man. God said His work was "very good."

Christians compromising with the world attempt to insert the evolutionary geological ages into Genesis 1:2 or they resort to the "day age" heresy. Yet, notice that Exodus 20:11 says that the heavens where created in six days. This means all the starry galaxies, the clusters and super clusters, and the vast walled tapestries stretched out like a tent over hundreds of millions of parsecs.

The first two verses of the Bible rule out the gap theory:

> "In the beginning of the Almĭghty's creating the heavens and the earth, 2 <u>when</u> the earth had been without form and void, and darkness was upon the face of the deep, and the Rŭakh of the Almĭghty was making a fluttering to be upon the face of the waters, 3 <u>then</u> the Almĭghty said, "Let it be light," and it was light."

The *waw* (Hebrew conjunction) at the start of vs. 2 is called *waw conjunctive*. As such it does not move the narrative forward. It only describes the setting for the creation of light, which is introduced with a *waw consecutive* in vs. 3, and that setting is that the earth had been without form and void, that is to say, unmade and unconstructed. Only water and darkness existed before light. The perfect tense in this case is properly rendered "had been," and not "had become."

It was all created in six days time, without a need for a gap in time on earth. The present configuration of the heavens reached its present shape through hyper accelerated processes elsewhere, which if they had occurred at earth normal rates, would have taken eons to occur. However, the Creator compressed His whole project of arranging the starry heavens into the time from the 4th day to the 6th day, and He was finished on the seventh. God hit the fast forward button on the cosmos for long enough for light to reach earth by the end of the 4th day.

Stellar Chronology

The sun, moon, and stars were created on the 4th day. How may we explain that light takes so long to arrive here? How may we explain that galaxies are crashing into each other? These events take eons of time as we know it here on earth. The answer is not just speeding up light and reducing the time it takes to get to earth. That is only part of the answer. The whole answer is that

every physical process was sped up in the rest of creation away from the earth's vicinity. The rest of the universe went in fast forward to produce all the effects we see. When the Almighty had it the way he wanted, then he took it all off fast forward so that the picture (light-borne information) of what happened arrived in synchronization with time-frozen physical processes near earth. There are some super complex mathematics that can simulate what I just described, but you get the basic idea.[4] The Almighty is like an artist who wanted to create a funny scene. The artist tied up a few cans of paint on strings and then let it dribble from the cans as they swung back and forth to make designs on the canvas. Only he did not want us to wait eons to see his finished painting, so he sped it up so we could see it. I think this more than compensates for the evolutionist complaint that the universe has an apparent sense of age to it.

This of course raises an important philosophical point. God could have created trees in the garden of Eden fully grown so that man would have food to eat. He assembled the whole tree in his infinite mind at what would appear to be infinite speed to us. Any delay in his mental assembly would be self-imposed, but we can conceive of each tree going through the simulated process of growth in the mind of God before appearing by fiat in the garden. Or, alternatively, God could have only formed the seed in his mind, and then physically planted it, and then he accelerated its growth *in situ* in the garden, supplying all its needs by fiat. Any tree rings then indicate how many cycles of growth the tree went through either in his mind simulation or by accelerated *in situ* growth. And such growth, whether in his mind or an accelerated reality, is not measured by solar years even though the tree was designed to grow on a seasonal basis caused by solar years, after the Almighty finished creating it.

So cosmic evolution is not necessary to explain the origin of the universe. Observed physical laws may determine how the arrangement of the heavens operates when God is making it run in automatic mode, but they cannot truly determine how the heavens got there in the first place, when he was in the creative mode. God is an intelligent being. He has the choice to use uniform processes or not to use them. He can spin one galaxy around ten times and choose to freeze the rotation of another. He can cause the physics in one chunk of space to run on any timetable he wishes. He can even make different rates grade continuously into a neighboring region with a different rate of physics.

The problem with evolution is that everything has to be explained by unaltered physical laws without a creator making personal decisions that would cause such physical laws to appear discontinuous. That assumption that physical law itself must explain creation puts the law over the one who created the law. God has power over the laws to change their rates of action or their directions. So assuming that the universe came to be by physical laws alone without a personal Creator deciding which way he wants to use them, is idolatry.

The Definition of "Day" and the Day of Rest

The day is first defined in the Scripture as "light," and thus we must assume a period from dawn to dusk or twelve hours. The second definition of day is a calendar day lasting twenty-four hours according to the following:

> Then the Almĭghty said, "Let it be light," then it was light. Then the Almĭghty saw the light, that it was good: then the Almĭghty made a divide between the light and the darkness. Then the Almĭghty called the light "day," (and the darkness he has been calling "night.") Then it was setting; then it was daybreak. | Day One" (Gen. 1:3-5).

The *waw consecutives* have been rendered with the word *then* (which is the proper English translation of a waw consecutive), and the *waw conjunctives* with "and." Furthermore, instead of "evening" and "morning" I have rendered the text with the more precise "setting" and "daybreak" terms, so that it is now plainly evident that the setting and daybreak followed after the creative acts of the first day. Therefore, the summary "day one" at the end of vs. 5 defines a 24 hour calendar day going back to the start of vs. 3 when light was created. The second definition of "day" is from daybreak to daybreak.

The parenthetical phrase "(and the darkness he has been calling "night.")" was put in by Moses for the sake of completeness, or by Adam. In any case, the mention of darkness after day only reinforces the day and then night order of the twenty-four hour day.

When we come to Gen. 1:31, we are told that God "saw all that he had made, and then it was setting, and then it was daybreak, the sixth day." Since he saw all that he had made, evidently he quit work before sunset on the sixth day. For if he had made anything after sunset, he would not have been able to see "all" before sunset. Therefore, the Sabbath begins at sunset on the sixth day, and lasts till sunset on the seventh day. At sunset on the sixth day God switched his involvement with creation from creative mode to automatic mode. In creative mode he did anything he liked, tinkering with physical laws as he liked, but never contradicting the laws of logic. When the sun set, it was all in automatic mode. The physical laws were set in place without his creative interference. His power holds it together, but he does not have to engineer anything. All the engineering was done. On the rare occasions when God interfered afterward, we call miracles, but these occasions are either acts of judgment or redemption.

"And Elŏhim was finished on the seventh day from his work which he had done. So he was resting on the seventh day from all

---

4 *Starlight and Time*, Russell Humphreys. *Starlight, Time and the New Physics*, John Hartnett. Hartnett, J.G., "The distance modulus determined from Carmeli's cosmology fits the accelerating universe data of the high-redshift type Ia supernovae without dark matter," Found. Phys. 36(6):839–861, June 2006. <arxiv.org/abs/astro-ph/0501526> Hartnett, J.G., "Spiral galaxy rotation curves determined from Carmelian general relativity," Int. J. Theor. Phys. 45(11):2118–2136, November 2006. <arxiv.org/abs/astro-ph/0511756> Hartnett, J.G., Tobar, M.E., "Properties of gravitational waves in Cosmological general relativity," Int. J. Theor. Phys. 45(11):2181–2190, November 2006. <arxiv.org/abs/gr-qc/0603067> Oliveira, F.J., Hartnett, J.G., "Carmeli's cosmology fits data for an accelerating and decelerating universe without dark matter or dark energy," Found. Phys. Lett. 19(6):519–535, November 2006. <arxiv.org/ abs/ astro-ph/ 0603500> Hartnett, J.G., Oliveira,F.J., "Luminosity distance, angular size and surface brightness in Cosmological General Relativity," Found. Phys. 37(3):446–454, 2007. <arxiv.org/abs/astro-ph/0603500> Hartnett, J.G., "Spheroidal and elliptical galaxy radial velocity dispersion determined from Cosmological General Relativity," Int. J. Theor. Phys. 47(5): 1252–1260, 2008. <arxiv.org/abs/0707.2858> Hartnett, J.G., "Extending the redshift-distance relation in Cosmological General Relativity to higher redshifts," Found. Phys. 38(3): 201–215, 2008. <arxiv.org/abs/0705.3097> J.G. Hartnett, K. Hirano, Galaxy redshift abundance periodicity from Fourier analysis of number counts N(z) using SDSS and 2dF GRS galaxy surveys, Astrophysics and Space Science, Vol. 318, No. 1 & 2, pp. 13-24, 2008. <arxiv.org/abs/0711.4885>

his work which he had done" (Gen. 2:2). I have rendered the verb here Qal Passive וַיְכֻל, "was finished" because he did not finish on the seventh day. He "was finished on the seventh day." The Rabbis do not acknowledge the Qal Passive, but it is clear from linguistics that it existed.

"Then the Almĭghty blessed the seventh day, and he made it to be specially set apart, because in it he had been resting from all his work which he, the Almĭghty, had created for himself to do" (Gen. 2:3). Here I render the perfect as past perfect continuous, "had been resting."

The Date of Creation

In the charts, down the left side of the page, are the years B.C. (see charts, column "A"). The first year is **4139 B.C.** The creation was in the spring of **4139 B.C.** This makes the world **6174** years old at the next Jubilee in **A.D. 2035**. Some creationists, while affirming that the world was created in six days, wish to allow history to stretch out to 10,000 years (or more) citing possible gaps in the genealogies or by using the Septuagint. However, the Hebrew Masoretic Text is the best source available. In addition, an additional 4000 years of world history will not help creationists to fit geological successions into world history.

Every attempt to lengthen the chronology of the Bible by citing gaps, the LXX,[4.5] or by saying such things as Adam begat the "ancestor of Seth when he was 130" are aiming at defeating the intent of the divinely inspired author of the text to give a chronology from creation. These rationalistic maneuvers effectively claim the chronological facts in the first eleven chapters of Genesis are a meaningless exercise without any purpose. Moreover, such efforts are always the self-serving attempts of Christians to allow compromise with evolutionary ages or the geological ages of Darwinists in order to find some acceptance by the world or academia. In addition, from the standpoint of true science, they are unwarranted and unnecessary.

It is supposed by many that the stars might not have been created on the 4th day, "The Almĭghty made then the two great lights: the greater light for the rule of the day, and the lesser light for the rule of the night, and the stars" (Gen. 1:16). At issue is the last phrase, "and the stars," which some translations put into a separate sentence, "He made the stars also," implying that the stars could have been made eons before the sun and moon. The Hebrew text cannot read that way as the making of the sun, the moon, and the stars are all connected to one verb by the direct objection marker. The other stars were made the same time as the sun. The physics in the other part of the heavens where they were ran at a different rate. It is no different than God thinking a thousand thoughts between two of our thoughts. Light elsewhere moves mega parsecs while on earth it only moves a nanometer.

4.5 The Septuagint chronology is 1351 years longer than the Hebrew, and most of these years are obtained by adding 100 years to each of the preflood fathers at the birth of their sons, and most of the post flood fathers. Inasmuch as the Hebrew numbers are spelled out in words in the Hebrew text, it is inconceivable that the Hebrew text lost 100 years per generation in that many cases by accident. The case of the LXX is clearly one of deliberate embellishment, but the plot was not very clever, because Methuselah is stated to have born Lamech at age 167, who bore Noah at age 188, who then lived 600 years till the Flood. The sum of these figures is 955, which is 14 years less than Methuselah's 969 year lifespan. So how does he live those 14 years since he did not go on the Ark?

Creation in the spring

The creation of the world was at the time of the spring. For it is the spring that marks the beginning of life, when no shrub of the field has yet sprouted. Also, the biblical months are numbered from the springtime. Therefore, the first month began on the 4th day of the week in the spring, at the beginning of the natural year. This is also confirmed by the 7th month timing. Scripture requires "the 7th month" to occur at the harvest or in-gathering, which is in the fall. The fall begins exactly 6 months after the spring. Accordingly, the first month is determined from this point to occur in the spring. For 7 – 6 = 1.

The first month is called Aviv meaning "green ears" in reference to the barley that ripens at the spring equinox. The fall month, on the other hand, is called the 7th month. Aviv is called the 1st month. It is the month of the springtime Passover festival.

The sun, also created on the 4th day, defines the cycle of years from one equinox to the next spring equinox. While some may think that the year before the Exodus began in the fall, and then after the Exodus in the spring, there is no reason to think that the Creator redefined the beginning of the natural year at that point. The Scripture, at the first, declared that the lights in the sky were for times, seasons, days, and years. There is no reason to think that God changed his very good purposes for the Sun and Moon at the Exodus. It is better to think that he restored the original patterns and purposes.

During the 210 years in Egypt, Israel lost sight of the correct timing of the created year since the Egyptian wandering (or indefinite) year was imposed on them. The Egyptian year had no fixed point in the seasons. It was constantly shifting due to its imprecise length. So when God said that the Passover was to be in the first month in the spring, he was also saying that the year began then, and had to be the proper length. Indeed, the Passover was in the spring, and this was **400** years from the birth of Isaac, also in the spring of the year. Likewise, the **430** year sojourn from Ur began at the time of the spring festival which was widely celebrated in many nations. The age-based dating of Adam and the Patriarchs works harmoniously only with the normalized natural spring year. The flood year began in the springtime, and is equivalent to Noah's spring synchronized 600th year. I should also mention that Passover is celebrated "from days to days" (Exo. 13:10). This means year to year. Further, the spring is referred to as the "circuit of the year," and as the "turn of the year."

A civil year for the reigns of kings begins in the autumn with the seventh month. This year is also for sabbatical years and jubilee years as required by agriculture.

Adam

Adam lived 930 years. How is this to be calculated? Since I am 49 years old, then this means that I am at least 49 whole years, but less than 50 years. My actual age is between 49 and 50 years. When my years are charted, then my age will be calculated in months during my 1st year, and I am only one year old after the 12th month has finished. This shows up as a zero year in the age-

eras in the charts: 0 for Adam (G3-1).[5] During this year, age is figured in months. Adam begat Seth when he was 130 years old in the year 131. The green column in the charts refers to the year of the world. Year 131 was Seth's birth year.

Seth's first year is mapped as 0. After Seth was born, Adam lived 800 more years, and died at 930 in 931. This was the 931st year of the world. This does not mean that Adam lived 931 years, because the meaning of age is that one lived at least that many whole years. Adam lived 930 whole years, and some fraction of the 931st. Therefore, it is said he lived 930 years, and not 931.

No doubt, when Adam lived 130 years and begat Seth, this means 130.0 years plus some fraction of a year. Suppose the fraction was a ½ year. Does this mean that we have to extend the chronology by an average of a ½ year at every birth? No, because we find that the biblical writers used a standard epoch for age-based years (and every other kind of year) when the stated year was meant to be used in a chain of calculations, and not the actual birthdays when the birthdays were not on the first day of a year. Thus Seth is treated as 0.0 when Adam is 130.0 in the biblical chronology. The actual chronology is that Seth was born at 130 + x days of Adam in year 131, and when the 132nd year of the world is reached, Seth is 1. This is the method, even if Seth was born in the last month of Adam's 130th year. The authorial intent from the data in Genesis 5 is clearly that exact year accuracy should be preserved in the history. These standardized age years may be viewed as counting the exact number of spring equinoxes the person has lived through. The time before the first turn of the year counted is similar to an accession year for a king.

The Scripture seeks to explain chronology, not to obscure it. Assumptions that lead to ambiguity render a solution to the puzzle impossible. To place the matter beyond the possibility of solution was not the intent of the biblical author. For this reason, such assumptions must be discarded. To assume that the chronology connects with the birth month or day of the next child in line, and not with the ideal year epoch, i.e. the spring equinox, leads to the need to guess exactly the day and month of birth. We only know it in Adam's case. Since guessing frustrates the biblical intent to provide us with a complete and solvable chronology, the assumption must be discarded.

5 On the assumption that the chronology does not count the birth year as 0, Methuselah would die after the Flood, which is a contradiction, since he died just before the Flood. Proof: if Lamech's 1st year is Methuselah's 187th year (discarding the zero year), then 187 = 1 implies 368 = 182. Also, if Noah's 1st year is Lamech's 182nd (discarding the zero year), then Methuselah's age at Noah's birth is 368. Counting this as year 1 for Noah and adding 599 to find Noah's 600th year means that Methuselah would be 967 in Noah's 600th year, and 968 in his 601st year when the flood ended. Result: Methuselah's 968th year would be Noah's 601st. This is a contradiction, since Methuselah is prevented from reaching 969 before the flood. To repair this, all birth years have to be counted as 0, including Adam's first year. Not a small number of chronologists have fallen into the error of neglecting the 0th year for Adam, yet implicitly including it after Adam. This error has the effect of shortening the chronology by one year.

The Flood to the Exodus

I have proved that Adam must have a 0 year, and so also every other son linked in the chain from Adam must have a 0 year. The 0th year is the first year of life, but the 1st year of age is the 2nd year of life. Therefore, when the Scripture says the flood began "in the sixth hundredth year of Noah's life" (Gen. 7:11) it means the 599th year of age. For I am now 49 years old, but I am in the 50th year of my life. On the other hand, Genesis 7:6 declares that Noah was the "son of six hundred years when the flood had become waters on the earth." According to the standard, "son of" is a way of stating age, or years completed. Thus when Saul was the son of a year in his reign, he was in fact in his second year (1 Sam. 13:1). Accordingly, Gen. 7:11 refers to the 599th year of age, and Gen. 7:6 refers to the 600th year of age.

A reading of the flood account will make it clear that events are not described in a strict chronological order. The account keeps backtracking to fill in details. For example, Genesis 7:6 announces, "And Noah was a son of six hundred years when the deluge had been waters upon the earth." And then the very next verse proceeds to tell us, "Then Noah entered...into the ark" (Gen. 7:7). As the waw consecutive is from the narrator's point of view and not the actors in the narrative, it is a rendering of the story into past tense, i.e. "then" = "and also back then." The rule is that waw consecutive is consecutive when the author does not immediately contradict the notion of sequence. Otherwise it adds a detail, "and also back then" or it makes a conclusion, "so then consequently...." The use of the waw takes the full range of meaning of the English "then," i.e. then next, so then, back then, consequently then.

Plainly then, Noah was 599 factual years old when the flood started (in the 600th factual year), but then he was 600 years old according to the standard year, and thus was a "son of six hundred years" at the start of the flood. The precise meaning of "a son of 600 years" is that Noah's life had passed 600 spring equinoxes. The 600th year of Noah's age by the standard epoch overlaps his factual 601st year of life up until the point of his actual birth date. The years of standardized age and the factual years of life are distinguished in the chart. The 600th year of life and the 601st year of life are plotted according to Noah's actual birthday, which is sometime after the 17th day of the 2nd month. His years of age are plotted according to the number of spring equinoxes Noah had passed.

Although the chart has drawn the boundary of the 600th factual year enumerated on the 17th day of the month, the actual boundary of the 600th/ 601st factual year could be up to 365 days from the start of the standard 600th year of age. The corresponding statements that Noah was "in the 600th year" (factual) and a "son of 600 years" standardized would still be true. What "in the 600th year" and "in the 601st year" represent are statements of the personal logs kept on the ark according to the current factual year of age enumerated. The phrase "a son of 600 years" is the narrator's (and hence biblical chronologist's) insertion to explain things in terms of the standardized year. The overlap can only be achieved for the date of the 17th of the second month in the standardized year 600.

The Hebrew word מַבּוּל *mabul* properly means déluge. It is only used in Gen. 6:17; 7:6, 10, 17; 9:11, 15, 28; 10:1, 32; 11:10; Psa. 29:10. The word is not mentioned at any time in connection with the receding of the waters. When the ark grounded on Mt. Ararat, the *mabul* was over. The waters receding were just the aftermath. Genesis 7:17 makes this clear, "Then the déluge was forty days upon the earth." This is very important in respect to the enumeration of years after the flood. The déluge was over in 40 days, but the waters remained 150 days. The turn of the agricultural year came with the first day of the seventh month, and then the ark grounded on Mt. Ararat. This then is the first year after the flood: 1 (1657-K4).

Gen. 11:10 says that Arphaxad was born "two years after the flood" (שְׁנָתַיִם אַחַר הַמַּבּוּל). This is charted 2. At the same time Shem was 100 years old. It should be observed that the relationship between this 2nd year and Shem's 100th year is not unambiguous. However, the alternative choice would compel us to move the flood year to 2484 B.C. where the astronomy does not work out for the 17th of the 2nd month to the 17th of the 7th month to span 150 days. The day count is only 148 days in that year.

In 2483, the 17th of the 2nd month fell on a Sabbath day. This was the day the flood broke out, and the same day that Noah and his family entered their refuge. In Gen. 7:4 it was announced "For after seven more days I will cause it to rain..." and this was promised on the 10th of the 2nd month, which was also a Sabbath. The seven "more" days being the next week, and the rain came on the Sabbath at the end of it.

"At the limit of 40 days" (Gen. 8:6) Noah sent out a raven. Forty days from the 1st day of the 10th month landed on the 11th day of the 11th month, which was the first day of the week. Noah sent out the dove in Gen. 8:10 seven days after the raven, which was the 18th day of the 11th month, and again in Gen. 8:12 seven days later on the 25th day of the 11th month. These days were also the first day of the week.

Yahweh spoke to Noah and his family on the 27th day of the 2nd month, which was a Sabbath (Gen. 8:14), and told them that they should go out of the ark. In Gen. 9:1 the command is given to "be fruitful and multiply." We may suppose a date near this point for the conception of Arphaxad, in the 2nd or 3rd month of the year 1658. That year the 27th of the 2nd month was day 43 of the year. Allow then 30 days for conception, and 266 days for the pregnancy. This puts the birth on day 339 of the year (43+30+266), just in the middle of Adar, and some three weeks before the spring equinox as there was an Adar II that year. This then confirms that Arphaxad was born in the same year that they left the ark, yet after the turn of the 7th month, and thus two agricultural years after the flood. This makes year 0 for Arphaxad the year 1658 B.C. They were an obedient family. They were commanded, and then blessed. It follows that the birth happened at this time, which would be the same as the 601st year of Noah's standardized age.

There is therefore no possibility of figuring these years in any different fashion without contradicting the statements or implications of the biblical text. It has been shown that standard age years are counted at the completion of the actual year, with the passing of the spring equinox.

The New Moon and the Date of Creation

Calculation of the new moon shows that the first day of the first month of the first year fell on the first day of the week. The moon, however, was created on the 4th day of the week, so what this finding will mean is that the Almighty set his lunar clock to

synchronize with the first day of creation. The day was made first since it is the fundamental unit of time by which greater lengths of time are defined. The celestial clocks to time days were made four days later. Thus a month is 29 or 30 days. A year is 365 or 366 days. So the sun and moon were created on the fourth day, but their time keeping properties were set to synchronize with the first day. Until then time was kept by the temporary source of light created on the first day. It might seem reasonable to some to have the first day of the month on the 4th day of the week, however this leaves three days out of the first month. The case is that the first three days are included in the first month. For this is what astronomical calculations actually show.

To verify this for the date of creation in 4139 B.C., I first calculated using our custom new moon program using JPL DE404 which adjusts the ELP2000-85 analytical Lunar theory of Chapront-Touzé. I used Bernard Yallop's method of crescent visibility in the program, and Roy Hoffman's improved method of determining crescent width topocentrically with a geometric method. For the ΔT polynomial I use $\Delta T = 28.75 \times T^2 - 43200$.[6] The new moon day falls on the first day of the week, with theoretical visibility being calculated 11 hours before dawn. The preceding day yields a very low probability of visibility. The time of the new moon is 4/24/4139 B.C. (which is 4/24/-4138 in astronomical time) and 16h 32m 11s GMT. The location used is Jerusalem: LAT: 31.46 north; LON: 34.38.45 east.

The arc of light from our program was 22.14º and the arc of vision 21.59º. This was rated "A" for visibility by the Yallop criteria. I then did the same calculation using Solex 11.0 using JPL DE406 with $\Delta T = 58{,}844$ sec (see procedure in note 6). This yields an arc of vision at 21.5º, and an arc of light of 22.06º. These values are just under the values from my program. Then I calculated the circumstances in Stellarium 0.12.4 using a custom delta T: $\Delta T = 28.75 \times T^2 - 43200$ and $\dot{n} = -23.8946$; (a = -43200, b=0, c=28.75, y=1820, l=-23.8946). Angular calculations show arc of vision = 21.87º, arc of light = 22.29º. This is not as perfect as Solex 11, but it is good enough to make a valid witness. I also calculated with (a = -43200, b=0, c=32, y=1820, l=-26) in Stellarium with similar results.

Therefore, calculations according to Solex 11.00, Stellarium 0.12.4, and my own program show the new moon day is 4/25/4139 B.C. based on a theoretical sighting 11 hours earlier on 4/24. And this fell on the first day of the week.

The Spring Equinox and the Date of Creation

Let us now investigate when the spring equinox occurred with respect to the date of creation. For the equinox positions we have the fact that the Great Pyramid is lined up with the true cardinal directions, plus the fact that certain stars appear to line up with it around 2350 B.C. Also we have ancient Chinese records fixing the equinoxes and solstices about this date. This appears to confirm that there has been no great change in precession of the equinoxes, the value of which is currently 28,771.6 years/cycle. I can now show that the current value of precession of the equinoxes predicts the date of creation.

Using Solex 11.0 (set to JPL DE406) set at the same values as stated above. I back the time off to the theoretical sunset on 4/24/-4138 (astronomical year), which is 17:41 LT (15:41 UT). This program measures azimuth from south moving clockwise to north. The azimuth of setting is 90.027, almost perfectly due west. The refraction setting is off since there is no atmosphere to cause refraction at this point in creation. The equinox point is 90.00 degrees. We can easily assume the 0.027 degree is due to inaccuracies inherent in astronomical modeling. Next we move forward to dawn on 4/24/-4138 (astronomical year). The theoretical sun is now at azimuth 269.683 at sunrise (5:38 LT) (3:38 UT). This is just north of east (270d). The calculation for 4/24 was so close to 90.0 degrees that we cannot say which side of the equinox point it was on, however, at dawn on 4/25 the theoretical sun point has just passed the equinox point.

I checked the figures in Stellarium 0.12.4. This program uses VSOP87. On 4/24/-4138 at theoretical sunset (with the refraction off) the center point stood at 269º 51'. This program measures azimuth from north moving clockwise. So the setting point is just south of due west, and has not reached the equinox point. However at the rising point 4/25/-4138 at 3:34:38 UT the theoretical sunrise is at 89º 55' 10''. This is just north of due east, which means the equinoctial point has just been passed. The tip top of the theoretical sun is just 22 arc minutes north of due west when the top just peeks above the horizon. When the center of the sun crosses due east (90d, 0', 0") it is 0d 7', 46.4" above the horizon. Then at 7:59:12 UT (10:59:12 LT) The sun point passes through 0h 0m 0s RA.

I have been using terms like setting point, sun point, theoretical sun to describe the situation. This is because the sun was created on the fourth day. When it was created, its yearly timekeeping was synchronized with the first day of creation. So then we have this most amazing of circumstances in that the equinox, the new moon, and the first day of the week all came together in the year 4139 B.C. The equinox does not land on the new moon day but once in 30 years. And the first day of the week only comes once every seven days. Therefore this synchronization only happens but once in 270 years. So it appears that the day, the month, and the year all started out at the same time.

The Months of the Flood Year

We have been given in the flood account a period of 150 days lasting from the 17th day of the second month to the 17th day of the 7th month. Now there can be no more than four 30 day months in a period of five months; one of the months will of necessity be 29 days. This comes out to 149 days. The 150th day is obtained by inclusive counting. Both the 17th day of the 2nd month and the 17th day of the 7th month are included in the counting. It is not an accident that the astronomy for 2483 B.C. just happens to work out this way. The month lengths are as follows: II: 30 days; III: 30 days; IV: 29 days; V: 30 days; VI: 30 days; it matters not how long the 7th month was as the 17th day is before the end of it; nor does it matter how long the first month of the year was, since the 17th day of the 2nd month is after it.

This arrangement can only be calculated within a narrow range of astronomical parameters. The first of these is that the correction of Joshua's long day must be included. The second is that the value of the secular acceleration of the moon must be

---

6 My program uses an $\dot{n} = -23.8946$; The factor **−43200 sec** corrects for Joshua's long day. The correction for $\dot{n} = -26.0$ is **7118 sec** (cf. Espenak below). My evaluation of $\Delta T = 58{,}844$ sec; For comparison drop off Joshua's long day factor (add **43200**) and normalize for $\dot{n} = -26.0$ (add **7118**) $\Delta T = 109{,}162$ sec; Peter Huber's standard error is **17,467 sec**. My ΔT is therefore well within the error limits for this date, e.g. Espenak and Meeus (2006): $\Delta T = -20.0 + 32.0 \times T^2 = 113{,}572$. $T = (-4138 - 1820)/100$. For the $\dot{n}$ correction Espenak uses the equation: $c = -0.91072 \times (\dot{n} + 26.0) \times T^2$, where $t = (\text{year} - 1955)/100$. The value of **c** should be added to the ΔT of an ephemeris using $\dot{n} = -26.0$ (i.e. DE406) to compare it with the ΔT produced by an ephemeris using $\dot{n}$. See page K8, Astronomical Almanac.

correctly chosen. These values are $\Delta T = 28.75 \times T^2 - 43200$ and $\dot{n} = -23.8946$; these values are well within the acceptable range for the calculation of ancient eclipses up to 1592 B.C. when Joshua's long day took place. I will show that when the correction is made we can also calculate two known Chinese eclipses. One is in 2141 B.C. and the other is in 1909 B.C. These I will discuss later. Now I would like to show what constraints are put on the ΔT formula, which takes the form of $\Delta T = a + b \times T + c \times T^2$. The optimal value of c is 28.75.

Test Values

c parameter	150 day count?	ΔT
26.00	149 days only	
27.00	149 days only	
27.0625	149 days only	
27.125	**150 days**	**7024**
27.25	**150 days**	
27.50	**150 days**	
28.00	**150 days**	
28.75	**150 days**	
29.00	**150 days**	
30.00	**150 days**	
30.5	**150 days**	
30.625	**150 days**	**13505**
30.75	149 days	
31.00	149 days only	
32.00	149 days only	
32.5[7]	149 days only	

The working range is 27.125 to 30.625, and the mean value is 28.9. The difference between c=30 and c=31 is 1851 seconds or 31 minutes. The difference between c=27.125 and c=30.625 is 6477 seconds or 107 minutes. Astronomical calculations have to drive through a "window" of 107 minutes in order to match up the flood calendar correctly. The scriptural text itself indicates the necessity of driving the equations through this window. And it is most convenient to do so using the standard astronomical calculations. What this suggests is that if there were any catastrophes that upset the timing of the sun and the moon, then the clocks were set back on schedule. Everything goes correctly right through the flood year, which is the main catastrophe we have to be concerned with. Our programs hit the target at the end and start of the flood. Thus it is fairly safe to say that the sun and the moon moved uniformly back to the creation also, since there were no catastrophes to be concerned with.

Following the flood we have to be concerned with residual effects of tectonic movement. Currently the Chandler wobble moves the pole about 20 feet over a period of 433 days. It is not impossible that this wobble increased to a degree or so after the flood as mass moved around in the earth. However, earth's inertia rebalanced the mass and the wobble was damped out. If this were not the case then it would be unlikely that we could steer the standard equations through the flood year and back to a synchronization of the sun and moon on the first day of the week at creation. The possibility of doing so strongly suggests that the Almighty is very concerned about keeping his created timekeepers in the heavens punctual, even if that means resetting the clock to keep it on time.

7 If $\dot{n} = -26.0$ is chosen then the c=32.5 becomes a viable formula, which is to say Stephenson's formula's still works.

Calculating the flood months with the more updated values where $\Delta T = 32 \times T^2 - 43200$ and $\dot{n} = -26$:

M	UT	23.9' 27.125	-23.9' 28.75	**-26' 32**	-28.9' 30.625	median
II	16:30	11.55°	11.93°	**11.8°**	12.37°	11.96
III	17:00	15.85°	16.24°	**16.11°**	16.69°	16.27
IV	17:26	20.84°	21.23°	**21.18°**	21.70°	21.27
V	17:10	14.69°	15.08°	**15.05°**	15.54°	15.11
VI	16:50	20.14°	20.57°	**20.72°**	21.07°	20.61
VII	16:18	26.58°	27.05°	**27.53°**	27.60°	27.09

At the top are the lunar longitude acceleration values pertaining to the the values directly under. Down the left are the months II-VII. Column 2 is the Universal Time that the measurement was made ±5min. The next four columns are arc of light measurements (AL), which is the degree angle from the center of the moon to the center of the sun at the best time for observing the new moon. At the top of each column is the c value in the equation $\Delta T = c \times T^2 - 43200$. The red column represents the latest NASA equation (Espenak: $\Delta T - 20.0 + 32.0 \times T^2$). I have dropped the completely superfluous -20 sec from the equation. The values in the red column were hand calculated using Stellarium's angle measuring tool (good to 0.1°). The rest are machine calculated.

Each of the arc of vision values, based by the standard equation, is bracketed by my lower and upper range (27.125 to 30.625). This means that the flood months fit exactly the state of the art equations for delta T.

The Tower of Babel

The location of the tower of Babel is in the land of Shinar, which begins south-west of Mt. Ararat in northern Syria. The Scripture states, "And it was in their journeying from the east that they found a plain in the land of Shinar" (Gen. 11:2) "From" the east is correct, as shown by the *King James Version*, and also in the Greek Septuagint (ἀπὸ ἀνατολῶν), and Hebrew מִקֶּדֶם. The word, שִׁנְעָר, *Shinar* is similar to the Hebrew word *naharayim*: נַהֲרַיִם. This means "two rivers" more literally שְׁנֵי נַהֲרַיִם, *shenay naharayim.* Men first arrived in Shinar in north-west Mesopotamia where the two rivers begin. They then migrated south-east following the two rivers to the Persian gulf.

After the flood, most of south Mesopotamia was under water, and these waters carved out a shoreline just north of the traditional site of Nebuchadnezzar's Babylon in a very few years. However, the seas were exceptionally warm (about 80° F) causing abundant rains to fall. Vast quantities of water flowed down the two rivers bringing enormous amounts of silt and other deposits with them. Meanwhile, it was snowing nonstop in northern and southern latitudes, and also in highlands everywhere in the world. It was the beginning of the ice age. At first the snow melted and was returned to the sea. During this time a shoreline developed north-west of the traditional site of Babylon and other cities of south Mesopotamia, but then the snow began to accumulate, and was not returned to the sea as water. The sea level began to drop, and in the process south-east Mesopotamia was revealed. The rains and abundant growth of grasses quickly cleansed the land of salt leaving salt marshes only in the very south-most part where the water table and tides interacted with the sea.

If the ice from Antarctica and Greenland were to melt, then south Mesopotamia would be re-flooded with almost 300 feet of water, according to the calculations of scientists. The sea level

could have dropped after the flood much more rapidly than they suppose, and likewise the ice build up could also be speedier. It is also possible that the land was still rising a bit after the flood, and that this dropped the relative sea level also, except in those areas where new ice was depressing it.

After the flood, animals would have multiplied much more rapidly than man. Noah took seven pairs of the clean animals on the ark. He also took seven male and seven female cows. Six pairs can multiply to over two million in just 79 years when they reach maturity in one year:

Yrs	Adults	Births/yr	Pop
1	12	6	18
3	18	9	27
5	27	14	41

In the first year 12 adult cows conceive 6 offspring, which are born at the end of the year making the population 18. The offspring take 1 year to mature, so that at the start of year 3, 18 cows conceive 9 offspring, and at the end of the year they are born making the population 27, and so on. At this rate of increase the population in years 73-79 will be:[8]

73	833,803	416,901	1,250,704
75	1,076,966	538,483	1,615,450
77	1,388,897	694,448	2,083,345
79	1,788,407	894,203	2,682,610

So, there is no difficulty in the animals keeping ahead of the human population, since people take much longer to reach maturity. Also, people would have taken sufficient animals wherever they went to provide their needs. It is not necessary for animals to multiply in areas that men did not migrate to immediately after the flood. The fish and game would have been plentiful in just a few years after the flood.

To model the human population after the flood I make the following assumptions. First, Canaan was cursed soon after the flood. It could be that Canaan was complicit in the exposure of Noah's nakedness, and that this is why Ham did not get cursed. When Canaan learned of the curse he would have an early incentive to overcome it. The best way to avoid or delay the curse was to multiply faster (cf. Gen. 9:27), and Canaan did make an effort to multiply early, as his first children became the patriarchs of 11 nations. Furthermore, Canaan's proximity to his brothers would have encouraged them to multiply faster. Finally, I hypothesize that Ham's descendants had the genetics for earlier maturity than Japheth or Shem. Thus they had a fleshly defect. Their development preceded their mental discipline. Further, it appears that Canaan was born first, even before Arphaxad (cf. Gen. 9:18), and if Canaan had introduced a proclivity to sexual perversion, then that would explain why it showed up generations later in Sodom and Gomorrah in an advanced form. And Noah would have known where even perverted childish pranks lead. He has been watching antediluvian man become corrupt for 600 years. His curse was therefore based on observation.

I have therefore set generational maturity at 16 years of age for Ham's descendants. For Japheth I set it at 20 years, and for Shem at 32 years. Also, I hold the names in the table of nations not to be all the sons born by Shem, Ham, and Japheth, but only the earliest, who became the heads of nations. They were each to live about 600 years. There is no reason to suppose that they gave up having children after the first ones. However, I did not calculate after the first 20 children. The birth rate was set at one child per year for all three. If Noah and his wife could still have children, it should be supposed that they were all daughters, for they are not recorded. If another son had an excess of sons early on, then Noah's having daughters would contribute to increased population. However, I did not include this in calculations.

After 100 years the totals are Ham: 56,206. Japheth: 20,234. Shem 2,246.[9]

I further propose that the Hamites separated themselves from Shem and Japheth because of the curse and tensions caused by the earlier maturity rate, and that they discovered the plain of Shinar and journeyed as far as the sea in waves of immigration after they learned how prosperous it would be. For their greater multiplication would encourage them to seek long term opportunities the sooner. The journey was about 700 miles. It is said that antediluvian man could run a hundred miles in a day. Even if a fraction of this ability was left over after the flood for a while, much exploration would have taken place.

Ham's children had much of the intelligence of antediluvian man. They expertly chose the highest ground to build on that was close to the water and the sea, with future commerce, fishing, and exploration by boat in mind. But they soon began to neglect the truths they had learned from Noah and allowed humanistic ideas to develop, thinking to achieve great things. Ham's sons were negligent in teaching their children the ways of Noah. It is also possible that corruptions were revealed derived from antediluvian times.[10] However, I find the fleshly human nature, and Satan's exploitation of it a sufficient cause of Babel. It only takes one conspiring rebel, the fears of suspicion, and a lot of ignorant empty heads to turn a population to idolatry.

At first they hunted game and multiplied, then they turned to farming and city building, and multiplied even more. But one among them consciously rebelled even more against the truth they had known from their parents, and began to take advantage of the humanistic beliefs and to introduce idolatry, to bring God down to a human level. He also had the advantage of being a greater hunter who seduced the people into following him using his talents. His might made it right. He then turned to hunting the souls of men by exciting their religious fears, and by craft and manipulation he brought other settlements under his power. He transformed the truth of the flood and long lived men into tales of gods. He promoted himself as one who had a special relationship with the gods.

As a symbol of reaching the gods he caused them to build the tower of Babel, and every evil spirit and fallen angel saw in this man the opportunity to renew their war against the Almighty after the defeat they suffered at the flood. So they encouraged

8 Note: I limited the bearing years of cows to 15 years. Also, this rate of increase could be sustained in only the most ideal of circumstances. As populations increased it would have to decrease.

9 The standard population formula is: $P_n = 2 \times c^{n-x+1} \times [c^x - 1]/[c - 1]$. I have not used this formula, but instead have calculated for each year using a spreadsheet with the same method as used with the example of the cows.

10 Several good novels have been written by John Reed giving some suggestions about how such corruption could quickly spread.

him. And those who had replaced the faith of Noah for a humanistic system of beliefs fell prey.

But the Almighty intervened and put a stop to their building and slowed the rebellion by confusing their languages. Without the ability to communicate, the enemy's efforts would be turned against himself until the curse of Babel could be reversed. Meanwhile the Almighty had time to work his plan of redemption.

There are traces of the biblical narrative in the Sumerian legends. These legends were the original tales told by the instigators of the rebellion against Yahweh. The Sumerian King List corrupted the genealogies of Genesis 5 into a tale of god-men who lived thousands of years and had absurdly long reigns. The story of Noah was mixed with idolatry and retold in the Gilgamesh Epic. The story of Nimrod appears in tales about Enmerkar and his conflict with the king of Urartu. Possibly this reflects a conflict between Nimrod and Noah. But always the Scripture gives the straight and true version. The Babylonian myths were corruptions designed to cause people to disbelieve Noah and to trust tales supporting false gods and the princes of Shinar.

The modern equivalent of the Babylonian myths is the religion of evolution and humanism. The ancient Mesopotamian myths and the evolutionary theory have one and the same goal: to justify rebellion against the Almighty. David Rohl, author of *From Eden to Exile*, has done an excellent job of combining a humanistic worldview and rationalism with the Babylonian myths. He extracts what he thinks is a seed of truth from the Bible and then uses his worldview to retell it. However, most Egyptologists do not accept his 200+ downward revision of history.

The Scripture is the true source, and nothing that cannot be confirmed by Scripture within the Babylonian myths needs to be believed. And the details in the myths and legends that are not outright contradicted by Scripture should be dismissed as soon as more reliable sources or calculations show the detail to be faulty. Scripture tells us what is necessary to know, and not everything. The goal of the enemy is to fault the biblical story, and not to prove the myth. Our goal is to show that the alleged faults of the biblical narrative are unjustified, principally those concerned with chronology. Guilty men and women are predisposed to believe myths without proof because the truth exposes their guilt and makes them feel bad. That must be overcome to embrace the Redeemer.

Now Peleg was born in **2383** B.C. or year **1757** of creation. This was just **100** years after the flood. Genesis 10:25 states, "for in his days the earth was divided." This refers to the division of the descendants of Noah into 70 nations from a population of around 50,000. This is a guess, of course, on my part. I would suggest that there are several scenarios and ranges of figures one could come up with that will fit the biblical narrative. Again, my reason for proposing a number is to demonstrate that the Scripture can fit any restraints that true research and discovery will require. However, someone with a bent worldview is not going to offer those choices. They will offer anything but those choices in their servitude to the enemy.

It might be thought that this number is too small, however, one of the largest cities in Shinar after the time of Babel was Uruk (biblical Erech) which only had 10,000 to 20,000 people. If only 50,000 migrated to Shinar, then there would be at least 8,000 adults who had their language confused, enough people to make 70 nations with about 120 adults and almost 600 children each. These nations split up on the plain of Shinar at first, with a few groups heading away right away (parents with fewer small children), and the ancestors of the Egyptians and the Chinese. By the time 20 years after Babel had past, perhaps half the people of Shinar had left (having left off child bearing long enough to migrate). Those who stayed became embroiled in endless wars as the princes of Babel sought to restore their lost glory.

We need not think that the nations were composed of even numbers. I propose a break down something like this.

Akkadian	5,000	1 nation	
Sumerian	15,000	1 nation	
Other	30,000	68 nations	441/nation

The dominate group that stayed behind were those who spoke Sumerian and thus became the Sumerians. I also propose that those who ended up in the smaller nations were the more blessed, because the two principal groups ended up fighting constant wars. The rest were able to go forth and fill the earth. Why do I propose the largest number of people in one language and group, namely the Sumerians? It is my opinion, but I think that it was easier for the Almighty to allow them to destroy themselves by the endless wars their pride caused them to fight. Meanwhile, the more innocent parties were fruitful and multiplied outside of Mesopotamia.

Where is the original Babylon? Is it the Babylon of Nebuchadnezzar? Babylon is difficult to identify because the name was reused for other cities, and for quarters of other cities wishing to claim its religious prestige. Usages range from Eridu in the south to Nineveh in the north. Often in the building of temples, soil was taken from the "original" site and incorporated in the foundations of new temples. After the confusion of the tongues, the great cities, and cities yet to be built all wanted a piece of Babel. Due to this confusion, the naming of a site as "Babylon" is quite insufficient to make a probable identification of the original Babel.[11] It has been suggested that an unfinished ziggurat in Eridu was the original tower of Babel. If an unfinished building is the only piece of evidence advocating this site over others claiming to be Babylon, then the argument for it is on thin ice.

Archaeological Finds

We are faced with several phases of habitation in Mesopotamia. First, there is clearly a hunter-gatherer culture at some of the earliest sites, then a culture of farming without writing, then a culture of the earliest writing, and then a culture of standardized cuneiform writing. The time span from the flood to standard cuneiform writing was about 120 years. By the time 150 years passed it was standardized, and there were two languages that used it: Sumerian and Akkadian. It then soon spread to the Hittites and the Egyptians. We need not suppose that cultures all converted to farming or all used writing when they were invented. Expect to find every type of culture existing in parallel at the same time, from 'stone age' throw-backs, to hunter-builders, to farmers without writing, and then central cities with writing.

The classifying of archaeological sites into time frames and culture types must be done by persons of a correct worldview and who accept the biblical chronology. Secular archaeologists spin tales out of the available evidence just as fast as Nimrod spun his tales from antediluvian history to seduce the people into

11 *Babylon as a name for other cities including Nineveh*, Stephanie Dalley, University of Oxford; oi.uchicago.edu; proceedings of the 51st Recontre Assyriologuique Internationale, July 18-22, 2005.

idolatry. When they tell you that a series of horizons and cultures at a site exceed the biblical chronology and context, then do not believe them. If you are threatened by their tales, then you will have to repeat their work and apply the correct worldview to an analysis of the actual evidence. It is necessary to trust the Almighty and his word, and then to make sure that the opinions of those who do not are not allowed to come between you and the actual evidence. The enemy is expert at sneaking assumptions (and hiding them) into their analysis that generate contradictions with biblical truth.

For instance, why does a culture primarily hunt? Is it because they are dumber and less intelligent than farmers? That is what the evolutionary worldview would assume, and that is what archaeologists assume when they stretch out their time lines. The reason the people hunted is that game was an abundant and easier food source than farming. The hunting culture lasted as long as the humans were few and the animals plentiful. Humans who hunted the animals down to subsistence levels either moved on to another area or they turned to farming. Those who reached America first hunted their whole journey here. Those in the lead kept moving on just to see what was in the next valley and over the next mountain. The reasons are purely economic or preferential. The reason that secularists draw out the time-line is that they think man has to become intelligent enough to move on to another stage of culture. Therefore they stack cultural developments into a long and drawn out sequence.

Consider the invention of writing. Writing was not invented because man became smarter. It was thought of from the beginning, but it was not put to economic use until an economic infrastructure was built up that could benefit from writing. Therefore, there are no temporal constraints on the speed of writing development. The use of "picture writing" in Sumerian was very short. More efficient methods were introduced quickly, and we are lucky to discover any of the first methods at all. Actually, writing was a form of "computer control" over sinful and lying people to keep them honest. Before, people had good memories and depended on trust to deliver on their agreements. Writing, therefore, became a necessity to keep sin from destroying the economic success of Sumer. It did not take the sinners 5000 years of dumbness to smarten up and figure out that writing would help them. That is what an evolutionist would assume.

Also, a lot of archaeological finds must be considered tentative and may be rejected if they tend to contradict the biblical narrative. Pottery can sift its way down into a lower horizon corrupting the archaeological correlation. A potter can take an antique design and reintroduce it. How can the archaeologist know that this did not happen? Or a particular local city may ban the import of foreign pottery as a threat to their own business. These suggestions are not meant to be precise professional opinions. I am sure that a professional archaeologist with a worldview committed to truth can offer a more precise list of reasons why archaeological constructs need not contradict revealed biblical truth.

Abraham

There are no more controversies in biblical chronology until we come to Abraham. I settled the fact that Adam's first year is the zeroth year of his age. Also solved is the relation of Noah's 600th year to the flood and the relation of Shem's birth to Noah's age. If these three points are miscalculated, then a discrepancy of up to 3 years can occur, which is very minor on the surface of things. But getting even one year wrong will ruin the astronomical synchronisms that we have discovered so far:

1. Spring equinox on creation day 1.
2. First day of first month on creation day 1.
3. Flood year month sequence.

Now I come to Abraham. With Abraham many chronologists make a 60 year mistake. Acts 7:4 makes it quite clear that Abraham departed from Haran "after his father died." What is confusing is that Genesis 11:26 says, "And Terah lived seventy years, then he begat Abram, Nahor, and Haran." This reads just like Gen. 5:32, "And Noah was a son of 500 years; then Noah begat Shem, Ham, and Japheth." It appears that Shem and Abram were firstborn sons in the 500th and 70th years of their respective fathers. However, it is not hard to prove that Shem was not born when Noah was 500. For it is written, "And to Shem were born sons. Yea, he was the father of the sons of Eber, brother of Japheth the elder" (Gen. 10:21). This states that Japheth was older, and it was not by a few minutes. To remove the matter from doubt, we have Gen. 11:10 "Shem was a son of a hundred years, then he begat Arphaxad two years after the deluge" (Gen. 11:10). The deluge was when Noah was 600. Therefore, Shem's birth is not reckoned from Noah's 500th year.

The scripture has therefore given us the key to unlocking its own cipher. There are only two texts constructed in this manner. In the modern way of thinking, we would assume that Noah and Terah had triplets. As this interpretation would be wrong, we must seek for another interpretation as to why three sons are listed in connection with the birth of a first born. The explanation takes two directions. First, putting Shem and Abram first can be justified because they were both advanced to the head of the family. Shem took the initiative in defending Noah's dignity (Gen. 9:32; 9:26-27). And Abram's older brother Haran died an untimely death, for those days (Gen. 11:28). Therefore, Shem and Abraham are listed first, as the birthright passed to them. It is a way of showing that one has the place of the first born even though one is not the first born. Second, the aim of the Ruakh is to obscure the answer so as not to make it too easy for every simple minded person who handles the Scriptures. If the chronology of the Scripture were so plainly written that any pagan or unspiritual person could figure it out without solving the ciphers, then the Scripture would be destroyed by those stopping up their ears, as soon as they learned what message it was teaching. It works the same with prophecy. If it were too clear, requiring no effort, then instead of unspiritual men attacking interpretations or providing simplistic interpretations of their own, they would simply burn it. The parables and ciphers allow them to see what they want to see since they are not interested in coming to a harmonious solution. The cipher shows them the doorway to error and thus protects the transmission of the Scripture. And so it will be until the times of the nations come to an end. Then Yahweh will reveal all plainly.

Biblical chronology is part parable, or we can call it a cipher. Not everyone is going to agree with the present author, because they wish to interpret certain sticking points another way. They are less interested in a complete harmonious solution, or they do not realize that their interpretation is an impediment to a consistent solution. Most people simply don't know.

Scripture provides its own precedent for when Abram was born via the Noah-Shem connection, and then it provides ample data to figure out when he really was born. In other words, it gives us permission to neither assume that Abram, Haran, and Nahor were triplets, or that Abram was born first. Only the most studious will realize this, and the most studious are those most interested in what the Almighty really has to say, and therefore

discovering the solution, they will be able to teach it to others and persuade them of the final truth of the scriptures. That is the position that comes to the diligent.

"Then the days of Terah came to 205 years. Then Terah died in Haran" (Gen. 11:32). "Then Yahweh said to Abram, 'Go for yourself from your land and from your birthplace, and from the house of your father to the land which I will show you'" (Gen. 12:1). Each sentence I have begun with a "then" to show the natural sequence of the *waw* consecutives. The normal way of taking the matter is to read the text in sequence. The *waw* consecutive is the story teller's device to relate the progress of a narrative in the retelling. Therefore, we naturally think that Terah died first, and then Yahweh appeared to Abraham to tell him to continue on the way. This reading of the narrative has support from Philo of Alexandria, who states "after his father died he then departed" (*Migration*, 177). Josephus implies the same by the sequence of his narrative (*Ant.* 1:152). In Genesis 12:4 it states, "And Abram was the son of seventy five years when he departed from Haran." Therefore, Abraham was 75 years old when Terah died at 205 years. Abraham was born when Terah was 130 years old. (See Appendix I: Terah-Abraham).

Abraham and Nahor were contemporary, but Haran was the first born, who begat Lot, also a contemporary of Abraham. Abraham and Nahor married after their brother had begotten children and died, "Then Haran died before the face of his father Terah in the land of his birth, in Ur of the Chaldeans. Then Abram and Nahor took for themselves wives" (Gen. 11:28-29). Nahor's wife was the daughter of his brother Haran. Again, the *waw* consecutive is telling the story in sequence.

Four Hundred Years

The chronology takes two directions at the birth of Isaac when Abraham was 100 years old. Firstly, we have the patriarchal line continued with Isaac's birth in 2108: 0. Then we have a 400 year era linking the chronology to the Exodus. The chronology runs into a dead end with Joseph, as no precise synchronisms are supplied with any of his descendants. In fact, after Joseph, the scripture abandons the method of building the chronology by age related synchronisms completely. The story of Joseph does introduce another sort of chronological synchronism. But first, let us discuss the 400 years.

Genesis 15:13-14 gives the chronological cipher for constructing the bridge to the Exodus, "Then he said to Abram, 'Knowing you must know that your seed will be a stranger in a land that does not belong to them. Then they will have served them, and they will have afflicted them: four hundred years. And also the nation which they will serve I am judging, and after that they will come out with great wealth." The only certain way to interpret this text is to take it as literally as possible. Abraham did not have any seed at all when Yahweh told him this, so accordingly the 400 years cannot have started. Secondly, Abraham was himself a stranger in a land that did not belong to him. Yahweh had promised to give the land of Canaan to Abraham, but Abraham had not received any of it except that which he paid for with 400 shekels of silver. Abraham states, "I am a stranger and sojourner with you" (Gen. 23:4). And this covers the point after which Isaac was born also. Therefore, Isaac was a stranger and sojourner. Isaac was also Abraham's seed, and he was afflicted by the inhabitants of that land. In fact, he was afflicted from birth due to the jealousy of Ishmael, whose supposition that he might be Abraham's heir was ended with the birth of Isaac.

The prophecy first says, "your seed will be a stranger in a land that does not belong to them." This appears to say "seed" in the plural, as the word for seed means either a singular offspring or plural offspring. However, there is a clue in the Hebrew. The verb "will be" is third person masculine singular. Literally, "your seed (he) will be a stranger in a land...." This syntax tells us that Abraham's seed will begin with the singular person, Isaac, but then will multiply into plural "seed." The cryptic way the message is worded is all the information we need, provided we understand that the Ruakh seeks to build a complete chronology and not one which is almost complete, with a fatal hole in the middle.

Therefore, Abraham's seed is Isaac, and the riddle is that Isaac's age will be counted with a zero year, but the 400 year era will be enumerated from the number -1-. Also notice that Gen. 15:14 ends, "Then they will have served them, and they will have afflicted them: four hundred years." There is no preposition before "four hundred years." It does not say *for* or *during* "four hundred years," which might lead us to think that the 400 years only applies to the period of enslavement at the end. The 400 years is a tally of the time during which all the conditions that Yahweh mentioned would happen. It does not just measure the period of enslavement by a particular nation. Abraham did not know it would be Egypt at the time. The 400 years are from the year 2108 to 2507 (2507−2108+1=400).

The 400 years would end with the termination of enslavement. If someone should be tempted to think that the enslavement itself was 400 years, this can be easily disproved. Genesis 15:16 says, "And the fourth generation they shall return here." The first generation to go down to Egypt was Jacob, and the second generation was Levi, whose age is given 0 to 137. And he was no less than 44 years of age when he went to Egypt. Moses was 80 in the year before the Exodus (Ex. 7:7), and Moses' mother was the daughter of Levi. Israel was in Egypt from 2298 to 2507, which is 210 years. If we suppose that they were in Egypt for 400 years, then we need to find another 180 years, and this would stretch the 35 year gap between Levi's death and Moses' birth to an impossible 215 years. This gap can in no way be spanned by a single generation. The four generations were Jacob, Levi, Jochebed, and Moses. These were the generations according to the prophecy. Other lines of Israel had up to 10 generations during the 210 year stay in Egypt. We gain a further idea of the time spent in Egypt by the generations of Levi. Levi lived 137 years. His son Kohath, who entered Egypt with him, lived to 133. And his son Amram lived to 137 also. Then came Moses, who lived to 120.

The Descendants of Isaac

In 2168 Isaac begat Jacob and Esau at age 60. In 2298 Jacob was 130 years old when he went to Egypt in the 2nd year of the famine. Now, age years are always calculated according to the standard solar year between two spring equinoxes. But the famine is according to the agricultural year, which ends with Tishri 1. It was thus in the first half of Jacob's 130th year that he went to Egypt, and in the second half of the 2nd year of the famine. These two years overlap for the first six months of 2298. Joseph assures us (Gen. 45:6) that the sowing of two crops had been bypassed two years and that there were five more seasons to come during which the famine would prevail. The evidence that the famine would persist another year was evident to Jacob at the start of his 130th year. He therefore sent his sons to Egypt a sec-

ond time. He himself went to Egypt before the third year of the agricultural cycle began. From here we work out that the first year of abundance was **2289**: **1**. Also in **2289**, Joseph was age **30** when he stood before Pharaoh (Gen. 41:46). Working back further to **2259**, it is the case that Joseph was born in the year at the end of Jacob's second seven year term (Gen. 30:25), which was the first year of Jacob's six year term in serving for Laban's flocks: **1**.

Seven Year Cycles

It is not a coincidence that the seven years of abundance and the seven years of famine coincide with the pattern of sabbatical years. They were announced in advance by the prophetic dream to Pharaoh, and therefore we may assume that the Almighty planned the matter to fit two seven year cycles and a Jubilee. The contract between Laban and Jacob, on the other hand, was not a divine agreement, but a human one, so we may suspect no planning in that case.

The years of abundance line up exactly with the cycles as counted from creation forward for the agricultural year, and also those counted backward from their official institution in Israel. Furthermore, Joseph returned the land to the Egyptians as tenants in the year of Jubilee in **2203**: 1/50. And this is correctly synchronized back to creation and forward to its official institution in Israel. To check the Jubilee from the year of creation divide the year of creation by 49 to find that there is no remainder: **2203** / 49 = 47. The overlap with the Jubilee is in the last half of **2203**. Therefore, the Jubilee is in the last half of **2203** and the first half of **2204**. The sabbatic year overlaps in the first half of a year of creation divisible by 7 with no remainder. **2303** / 7 = 329. Therefore, the sabbatic year is the second half of **2302** and the first half of **2303**.

The planting and harvesting times in ancient Egypt agree with the seven year cycle, wherein the planting is done in the first half of the year, and the harvesting is done in the second half of the year. The planting is done between Tishri and Aviv, and the harvesting is done between Aviv and Tishri. So the Egyptian agricultural year is congruent to a Tishri epoch for the sabbatical cycle. It begins after the *Akhet* "inundation" of the Nile in August. The tilling and planting season is called *Peret* and lasts from November to February. Harvest took place from March to June. This season was called *Shemu* or "deficiency." Joseph said that there would be neither sowing or harvesting. He is timing the year for planting and harvesting after this pattern.

Egyptologist David Rohl proposed that excessive Nile floods caused the famine in Egypt; however, he did not factor in the Scripture when drawing this conclusion. It says "then there was famine in all the lands" (Gen. 41:50), and "there was famine in all the lands, but in the land of Egypt there was bread" (Gen. 41:54), and "the famine was over all the face of the earth, all the earth came into Egypt to buy food from Joseph, because the famine was severe in all the earth" (Gen. 41:56-57). The famine was so severe in Canaan that Joseph gathered up all their money for food until there was no money left (Gen. 47:13-15). The famine was so severe that "the people he removed them to the cities from one end of Egypt's border to the other" (Gen. 47:21). So Nile flooding did not cause the famine. The famine was a global event caused by climate changes during the ice age. This change ranked next to the flood and the confusion of languages.

After the flood, the oceans were every warm. Volcanoes were spewing ash into the atmosphere, and continental dust was swept up from the denuded landscape by high winds. The snow began to fall immediately in high latitudes and high plateaus, leaving areas near the oceans ice free. The ash and dust was incorporated into ice sheets. The ice sheets grew high, and the oceans cooled until there was not enough snow to maintain them. The amount of dust in the atmosphere decreased, allowing the sun to melt the ice.

Paradoxically, during the ice age build up winters were relatively warm, and summers were cool but wet, and then at the end of the ice age, the summers grew hot and dry, and the winters bitterly cold. Rainfall drastically decreased due to the cooler oceans. What rain did fall evaporated due to the hotter summers. The bitterly cold winters were as arid as the Sahara desert over the ice sheets, but in the summer, they vigorously melted, releasing vast quantities of dust. Dust storms blanketed lower elevations, leaving higher elevations free to continue melting. The melt water blanketed the oceans, causing vast ice sheets at the poles, and plunging the temperatures. Elsewhere the ocean simply cooled further. However, the sun was winning this battle with the cold away from the poles. The ice melted, releasing dust that blocked the sun at lower elevations. Vast quantities of fresh water raged through the Nile valley, and every other valley downstream from ice sheets and glaciers.

The increased water flow was not the chief cause of the famine in Egypt or anywhere else. It was the dust and the plunging temperatures at the lower elevations. And when the dust did clear, it grew very hot and dry. Anyone who has lived in a desert knows that it can be boiling hot during the day, and bitterly cold at night. If the dust and temperature profile is balanced just right, then it can make it very difficult to grow anything just about anywhere. The temperature trends, dust trends, melt water trends, and every other climactic factor colluded in a very short time period to produce excellent growing conditions in Egypt. The weather grew warmer at first, and water was plentiful. But then the trends conspired to produce a catastrophic famine that followed. Dust and cold got the upper hand. Rivers everywhere raged out of control.

Men did not realize that the blessing of melting ice and warmer temperatures in the summer would bring the curse of dust, the curse of colder winters, and the curse of reduced rainfall. Snow that does not melt is no threat to global temperatures. When it does melt, it robs everything else of heat until it is done. So the famine was caused by catastrophic climate change, and the dynamics of the ice age were the main factor.

One cannot really tell when excessive flooding occurred in Egypt. Flooding did occur to be sure, but we don't know its schedule. The other climate factors mentioned are sufficient to account for famine with or without flooding. Rohl's attempt to date the famine by Nile level records left *in situ* is not only hampered by the fact that it is not the primary cause of the famine. During a span of 60 years there are 14 Nile level records left in place. During the seven years of plenty and famine, there are only three. We can't even tell what the average height was. Rohl merely assumed an average based on extrapolation, and then drew a graph showing peak Nile levels using 6 high Nile records in a space of 12 years. If only 8 of the missing 46 records are high during other times, then Rohl's graph is reduced to meaninglessness. I pity those who have to use such methods to work out the chronology. The Scripture has already reliably worked it out, and often proves to be the key to sorting out the archaeological evidence.

The Pharaoh that Joseph had to deal with was Amenemhet III. The Scripture chronology tells us where to look in Egyptian history, and archaeologists supply us with the data that can be

sorted out. However, only the Scripture can sort it out. Egyptologists have a Sothic date for the 12th dynasty Pharaoh Senuseret III, which makes his reign, and that of his son, Amenemhet III, contemporary with Joseph. However, the Sothic date is somewhat flexible, and therefore, we need more information to say precisely who was Pharaoh to Joseph. But first, we need to get the general time via the Sothic dating.

Most of the time Sirius can be seen sometime during the night, however, once every year the sun's light makes it invisible for about 70 days. As Sirius moves out of the sun's glare, once every year, it first becomes visible very briefly before sunrise, and then each day it becomes visible for increasingly longer periods of time before sunrise. The date on which the star first re-appears, for a brief time overcoming the sunlight, is called a heliacal rising. Using astronomical calculation, we can calculate the reappearance date of Sirius

I have put the Sothic dating on July 16, 1866 B.C. (IV Peret 16). The simulation in Stellarium works well with Sirius showing up on the date just before sunrise. Of course other dates are possible around this date due to uncertainties in the precise location of the observation. I did the calculations for Memphis, and tried out various extinction coefficients ranging from .2 to .35. To know for sure that the Sothic dating corresponds to 1866 B.C., we have to refine it with lunar dates of the El-Lahun papyri along with other papyri.

Here is how lunar dating works. The Egyptians had two calendars, a lunar calendar, and a civil calendar. The civil calendar had 12 months of 30 days each, and then a 5 day month at the end of the year. The civil calendar was synchronized to the Julian calendar in the Roman era. Therefore, we can convert any civil Egyptian date to a Julian date. Their lunar calendar was based on the phases of the moon. The first day of the month was the day on which the moon first became invisible. To simplify matters, the papyri contain double dates, wherein the same day is dated both by the civil calendar and the lunar calendar. The lunar calendar we can calculate using astronomy. The civil calendar we can also calculate. The two calendars match up in cycles of 25 years, and sub cycles of 11 and 14 years. It is therefore necessary to come close to the target year by other means in order to get a unique dating. And this is already done for us by means of the Sothic dating. El-Lahun Papyri:

Senuseret III

Papyri	Reign	Date[12]	Date BC	Moon
10092	5	II.24	1/25/1868	LD1-1
10009	5	VI.22	5/23/1868	LD1-1
10282	6	I.14	12/16/1868	LD1-1+
10282	6	II.13	1/14/1867	LD1-1
10282	6	III.13	2/13/1867	LD1-1+
10130	8	II.21	1/22/1865	LD1-1
10130	8	III.21	2/21/1865	LD1-1+
10003 (E)	9	VII.9	6/8/1864	LD1-1
10112	10	IV.29	3/30/1863	LD1-1+
10412	11	I.20	12/21/1863	LD1-1
10165	12	X.5	9/1/1861	LD1-1+
10248 (F)	14	II.17	1/16/1859	***LD30**[13]
10011	16	VI.23	5/21/1857	LD1-1
10016 (G)	18	X.1	8/27/1855	LD1-1+

12 Luft (1992).

13 "According to Luft the letter might have arrived on II Akhet 16, i.e. one day *before* the lunar month that is referred to would have begun. Therefore it is possible that the lunar dates do not correspond to observation, but to expectation and are off by one day" (pg. 424, *Ancient Egyptian Chronology*, Krauss, 2006).

Amenemhet III

Papyri	Reign	Date	Date BC	Moon
10090 (A)	3	XI.16	10/10/1851	LD1-1
10056 (1)	8	IV.25	3/22/1846	LD1-1
10166 (2)	9	II.16	1/12/1845	LD1-1+
c58065 (H)	9	X.12	9/4/1845	LD1-1
10018 (3)	10	II.5	12/31/1845	***LD30**
10079 (4)	10	III.5	1/30/1844	LD1-1+
10344 (5)	11	III.24	2/18/1843	LD1-1
10052 (6)	24	I.4	11/27/1831	LD1-1
10104 (70	24	VII.2	5/24/1830	LD1-1
10062 (B)	29	IX.6	7/25/1825	LD1-1
10056 (D)	30	X.25	9/12/1824	LD1-1+
10056 (D)	30	XI.24	10/11/1824	LD1-1
10056 (D)	30	XII.24	11/10/1824	LD1-1+
10056 (D)	31	I.18	12/9/1824	***LD30**
10056 (D)	31	II.19	1/9/1823	LD1-1+
10056 (D)	31	III.18	2/7/1823	LD1-1
10056 (D)	31	IV.18	3/9/1823	LD1-1
10056 (D)	31	V.17	4/7/1823	LD1-1
10056 (D)	31	VI.17	5/7/1823	LD1-1+
10056 (D)	31	VII.16	6/5/1823	LD1-1
10056 (D)	31	VIII.16	7/5/1823	LD1-1+
10056 (D)	31	IX.15	8/3/1823	LD1-1+
10006 (C)	32	II.8	12/29/1823	LD1-1+
10006 (C)	32	III.7	1/27/1822	LD1-1
10206 (8)	36	II.24	1/13/1818	***LD30**

No bad misses: score 39/39 = 100%. With near misses (marked *): 35/39 = 90%. LD1-1 = first invisibility day. LD1-2 = second invisibility day. LD30 = last visibility. LD2 = first visibility.[14] Without 10248, the score is 35/38 = 92%.

David Lappin's report on the scores, with myself added at the top:

Study		A	B	Y30	Percentage
Gregg	LD	33/39	38/39	1824	90-100%
Borchardt	FC	7/14	ND	1852	50%
Parker	LD	8/14	20/39	1813	51%
Reid	FC	11+/12	23/39	1549	59%
Weggelaar	LD	14/15	19/39	1557	49%
Krauss	LD	10/20	22/39	1788	56%
Luft	LD	23/39	23/39	1824	59%[15]
Rose	LD	35/37	32/39	1686	82-95%
Lappin	LD	35/39	31/39	1686	80-90%
Lappin	FC	37/39	38/39	1649	95-97%
Lappin	LD	32/39	36/39	1649	82-92%

Why did I score 90% against Ulrich Luft for the same year, who only scored 59-62%? The reason is that I factored in a 12 hour delay in earth's rotation caused by Joshua's long day. The long day changes about 50% of the months from 29 to 30 days, or 30 to 29 days. The red dates are New Chronology dates, and can be safely rejected since they fail to agree with sound Middle Kingdom historical research, as well as the Sirius dating. All

14 Notes: I have accepted Luft's argument that p10056 refers to LD2 throughout the source document. I have corrected IX.30 to X.1 for 10016 following Krauss' Commentary. I have taken David Lappin's advice and used IV.25 instead of IV.26 for 10056 (1). See "The Decline and Fall of Sothic Dating: El-Lahun Lunar Texts and Egyptian Astronomical Dates," David Lappin, JACF Vol. 9.

15 I reanalyzed Luft using Stellarium and angle measurement without a long day correction, and came up with 24/39 = 62%, which improved Luft's score as Lappin said it would with IV.25. I did that as a control experiment to be sure I analyzed my own data the same way. The + signs represent misses for Luft.

these alternatives demonstrate is that if one looks far enough then one will always find a match, even if it is 200+ years wrong.

Via Joshua's long day, the Scripture provides us the key to explain the lunar dates of the Middle Kingdom.

Near Misses		Arc of Vision
II.17	1/16/1859	10°21′
II.5	12/31/1845	9°
I.18	12/9/1824	10°
II.24	1/13/1818	9° 31′

Calculating The Exodus Year

I have worked the chronology forward long enough from the year of creation. It is now necessary to work backward from a fixed point to find the year of the Exodus and the year of Creation in terms of B.C. years. To do this we must begin with an astronomical fix to B.C. years in the Neo-Babylonian Empire. Then we can work backward using the long numbers in the biblical record. The matter is formally proved using addition and subtraction and the principle of substitution and equivalence.

I use a method of going forward and backward in time which makes it possible to deal with eras that go forward in time, and thus they count upward, while dealing with measures of time which count downward when going forward, such as B.C. years. Therefore, to go forward X years one subtracts X from B.C. years, but to go forward in a matching era that counts up going forward, it is necessary to add X years. And going backwards, the signs are reversed. One adds X to B.C. and subtracts from the matched eras, which are counting up in forward time. The method is fairly intuitive, and along with substitution and matched synchronisms, is designed to prevent trivial errors. The method of proof is that commonly seen in high school geometry classes.

In 2 Kings 24:12 Jehoiachin is taken captive in the **8th** year of Nebuchadnezzar. Stating the date in terms of the year of a pagan king instead of a native Israelite or Judean ruler sets a new Biblical precedent. The Holy Spirit knew that the kings would come to an end. Therefore, Yahweh provided for continuance of the chronology just where dating in terms of Jewish rulers comes to an end. That last Jewish king was Zedekiah, whose rule lasted 11 years, and ended in **587 B.C.** At the same time that Jewish regnal dating comes to an end, the chronology of the Neo-Babylonian Empire becomes reliable. It is almost as if the Spirit saw to it that the Babylonian chronology was preserved for the sake of Israel. For no secular chronology is perfectly preserved before the Scripture begins to utilize the dates. Assyrian chronology does not stand on its own. But Babylonian chronology does, due to the numerous astronomical observations made by the scribes. Historians all over the world consider it fit to use, as does the Spirit of the Almighty.

These astronomical datings provide the foundational link between B.C. dates and biblical chronology. Chief among these is **VAT 4956**. The tablet is dated, "Year **37** of Nebukadnezar, king of Babylon."[16] The observations in the tablet are unique to the astronomical year **-567** (**568 B.C.**). Here are the key observations for the planetary positions:

"Nisan the **1st** (Adar II had **29d**) the moon became visible behind the Hyades [Taurus, the Bull]; visibility lasted for **64m** [...]. Saturn opposite the southern Fish of the Zodiac [Pisces]."

"On the **1st** of Sivan (Airu had **29d**), the moon became visible behind Cancer; it was wide, **1h 20m** was its duration of visibility. A north wind blew. At that time Mars and Mercury **4** cubits [**8°**] in front of Regulus […]. Mercury moved below Mars further to the east. Jupiter above Antares, Venus in the west opposite the Lion's tail […]"[17]

I verified that Airu (Iyyar, Month II) had **29** days. The new moon for Sivan was **6/20/-567** (**568 B.C.**) at **UT 17:21**, **LT 19:21**. In Stellarium **0.12.4**, the arc of vision was **17°**. The arc of light was **20°**. The moon was opposite the star **82** Cancer. The lag time was **90** minutes, agreeing perfectly with the visibility time of the tablet, **80** minutes. Mars and Mercury were in conjunction **8°** in front of Regulus (A cubit is equal to **2°**). Mercury was just east of Mars and below Mars (**½°** below, **¼°** east). Jupiter was adjacent to the star Antares. Venus was adjacent to the tail of Leo. I verified that Saturn was opposite Pisces.

I have seen an oft quoted figure that the observations of the tablet are unique in a time span of **40,000** years. Since I must verify everything, I checked myself a **1304** year time span from **1220 B.C.** to **A.D. 85**. The observations are absolutely unique to **568 B.C.** Saturn has a period of **29.459** years. Jupiter has a period of **11.86** years. These two planets only repeat positions every **59.3** years, and not more than six times in a row. It was only necessary to test nine other years (**-804**, **-745**, **-686**, **-508**, **-448**, **-389**, **-330**, **-271**). In none of the other cases were Mars, Mercury, or Venus in the recorded positions. I have only verified uniqueness of the **568** B.C. match over **1304** years. The claim of uniqueness in **40,000** years for all the observations on the tablet could well be true.[18] The Scripture stooped to using the Babylonian dates, and then the Spirit of God led the archaeologists to the tablets in the fullness of time. Scholars spent innumerable man-hours learning the language of Babylonian astronomy and mathematics to decipher the texts. The tale of cracking their notation and methods is an epic saga of its own with many Jewish and Christian scholars giving their whole lives to the task.

1. Nebuchadnezzar **37** = **568 B.C.** (**VAT 4957** match)
2. Nebuchadnezzar **37**-**29** = **568**+**29** B.C. (Back **29** years)
3. Nebuchadnezzar **8** = **597 B.C.** (Result of 2)

Going back **29** years shows that the **8th** year of Nebuchadnezzar was **597 B.C.** This was the year that King Jehoiachin was exiled (2 Kings 24:12).

4. Jehoiachin Exile **1** = Nebuchadnezzar **8** (2 Kings 24:12)
5. Jehoiachin Exile **1** = **597 B.C.** (Substitution 3 & 4)

The prophet Ezekiel prophesied in the **5th** year of King Jehoiachin's exile (Ezek. 1:2). We need to find the **5th** year of King Jehoiachin for the next steps:

6. Jehoiachin Exile **1** = **597 B.C.** (From 4)
7. Jehoiachin Exile **1**+**4** = **597**-**4 B.C.** (Forward 4 years)
8. Jehoiachin Exile **5** = **593 B.C.** (Result of 7)

16 *Astronomical Diaries and Related Texts From Babylonia*, Abraham J. Sachs, Hermann Hunger, Vol. I, 562 B.C. to 262 B.C., VAT 4956 (No. -567).

17 Part V. Neugebauer and Ernst F. Weidner, A Text of Astronomical Observations in the 37th Year of Nebuchadnezzar II (-567/66), Ann O'Maly, 2011.

18 I have only exposited about 8 of the observations in the tablet here, all those given in the month of Sivan, and the Saturn observation given in the month of Nisan. There are 32 observations in all spanning a period of one year.

Going forward four years shows us the **5th** year of Jehoiachin's exile was **593 B.C.** In the same year Ezekiel was told that the iniquity of Israel was **390** years (Ezek. 4:5). From the perspective of the kings of Judah, Israel rebelled when the kingdom was divided between Rehoboam son of Solomon, and Jeroboam son of Nebat. The **390** year cipher is therefore prophesied such that the date of the prophecy was **390** years after the division of the kingdom of Israel from Judah.

9. Jehoiachin Exile **5** = Division year **390** (Ezek. 1:2, 4:5)
10. Division year **390** = **593 B.C.** (Substitution 8 & 9)
11. Division year **390**-**389** = **593**+**389** B.C. (Back **389** years)
12. Division year **1** = **982 B.C.** (Result of 11)

Go backward 389 years to find when the division of the kingdom occurred.[19]

13. Division year **1** = **982 B.C.** (from 12)
14. Solomon year **40** = **983 B.C.** (1 Kings 11:42)
15. Solomon year **40**-**36** = **983**+**36 B.C.** (Back **36** years)
16. Solomon year **4** = **1019 B.C**. (Result of 15).

Go backward **36** years to find Solomon's 4th year in **1019** B.C. In the same year was the **480th** year of the 'going out of Egypt' (1 Kings 6:1). However, this figure is a cipher. It only includes all the years that Israel was nationally keeping the Passover. To understand the cipher, one must keep the Passover in mind and heart, and better practice it, and realize that to keep the Passover is to be "going out of Egypt." If one does not keep the times and seasons of the Torah in order, then one has lost the key to understanding the revealed chronology. Therein is the reason that the solution has eluded many.

It is a trivial matter to prove that the years from the Exodus to the **4th** year of Solomon were more than **480**. We have:

Acts 13:18	**40** years in the Wilderness
Acts 13:19	Conquest, Division, Elders X
Acts 13:20	**450** years + Y (Samuel)
Acts 13:21	**40** years Saul
2Sam. 5:4	**40** years David
1Kings 6:1	**4** years to Solomon's **4th** year.

Total = **574** + **X** + **Y** > **480**.

The total years omits the Servitudes, when the heart of Israel was spiritually back in Egypt. **480** are the years Israel walked with Yahweh. During the Servitudes Israel walked after idols.

17. Total years = **480** years + Servitude years.

Servitude years:

Cushan Risha-Thaim	**8** years
Eglon of Moab	**18** years
Jabin of Hazor	**20** years
Midian	**7** years
Abimelech	**3** years
Ammonites	**18** years
Philistines I	**40** years
Philistines II	**20** years

18. Servitude years = **134** years.

19. Total = **480** + **134** = **614** (substitute 18 in 17; add)

Also: **574** + **X** + **Y** = **614**, so **X** + **Y** = **40**. **X**=**21**, **Y**=**19**.[20]

The relevant figure is **614** years counting from the Exodus.

20. Solomon year **4** = year **614** (from 19).
21. Solomon year **4** = **1019** B.C. (from 16).
22. **1019 B.C.** = year **614** (substitution 20 & 21).
23. **1019**+**613 B.C.** = year **614**-**613** (Go back **613** years)
24. **1632 B.C.** = Year **1** (Result of 23).
25. The Exodus was in **1632 B.C.** (Conclusion)

This is but one method of determining the year of the Exodus.

I now introduce a second method using Jubilees.

1. Nebuchadnezzar Year **1** = Jehoiakim Year **4** (Jer. 25:1).
2. Nebuchadnezzar Year **37** = **568 B.C.** (**VAT 4956**).
3. Nebuchadnezzar Year **37**-**36** = **568**+**36** (Go back **36** years)
4. Nebuchadnezzar Year **1** = **604** B.C. (Result of 3)
5. **604 B.C.** = Jehoiakim 4 (substitution 1 & 4).
6. +**3** -**3** (Go back **3** years).
7. **607 B.C.** = Jehoiakim **1** (Result of 5 & 6)
8. **608 B.C.** = Josiah **31** (offset by -1)[21] (2 Kings 22:1)
9. **608 B.C.**+**30** = Josiah **31**-**30** (Go back **30** years)
10. **638 B.C.** = Josiah **1** (offset by -1) (Result of 9)
11. **639 B.C.** = Amon **2** (offset by-1) (2 Kings 21:19)
12. **640 B.C.**. = Amon **1** (offset by -1) (Go back 1 year)
13. **641 B.C.** = Manasseh **55** (offset by -1) (2 Kings 21:1)
14. **641 B.C.** + **54** = Manasseh **55** - **54** (offset by -1)
15. **695 B.C.** = Manasseh **1** (offset by -1) (Result of 14).
16. **696 B.C.** = Hezekiah **29** (offset by 0) (2 Kings 18:1)
17. **696**+**28 B.C.** = Hezekiah **29**-**28** (Go back **28** years)
18. **724 B.C.** = Hezekiah **1** (Result of 17)
19. **714**-**13** = Hezekiah **1**+**13** (Go forward **13** years)
20. **711 B.C.** = Hezekiah **14** (Result of 19).

The **14th** year of Hezekiah was when Sennacherib sent his host into Judea. The Assyrian host was slain by Yahweh, **185,000** troops, at the start of the **15th** year of Hezekiah. According to the sign in Isaiah 37:20, they would live off the land for two years. This was the cipher for a Sabbatical year and a year of Jubilee, when sowing and planting was prohibited.

Therefore:

19 I have used round numbers here. In fact there is a +0.5 year offset at one place, and a -0.5 year offset at another place due to different new year epochs. The two places cancel out. +0.5 + -0.5 = 0 net effect on the result.

20 These results are not relevant to the explanation right now. The breakdown of X and Y are saved for a later section.

21 I have here skipped the 3 months reign of Jehoahaz and the long accession year of Jehoiakim to simplify the numbers. It amounts to -1 year. This deficit is compensated for because I will also neglect that Hezekiah and Manasseh's reign overlap by 1 year, which adds a year. +1 + -1 = 0 net.

710 B.C. = Hezekiah **15** = Sabbatical Year = cycle year **49**
709 B.C. = Hezekiah **16** = Jubilee Year = cycle year **49** + **1**

Going back **18** Jubilees (**49** x **18** = **882** years) is exactly sufficient to fit the chronology of Israel. (The **50th** year is the same as the first year of the cycle.) Therefore, calculate as follows:

709 B.C. = Jubilee (Isa. 37:20)
+882
1591 B.C. = Jubilee cycle year **1**.

Since all these years are on a fall to fall basis, cycle year **1** begins the fall of **1592** and lasts to the fall of **1591**. The conquest of Canaan proper began in **1592 B.C.**

1592 B.C. + **40** Years = **1632 B.C.** for the Exodus.

Connecting **1632** to the year of Creation:

The **400** th year from the birth of Isaac was the last year before the Exodus. The **400** years are from the year of Creation **2108** to **2507**. The year of the Exodus is **2508**.

2508 = **1632 B.C.**
2508 -**2507** = **1632** + **2507 B.C.**
1 = **4139 B.C.**

The year of the Exodus is **2508,** and this is year 1 of the wanderings:

2508 + **39** = **1632** - **39** = **1** + **39**
2547 = **1593 B.C.** = **40th** year of Wanderings.
2548 = **1st** Year in the Land

Determining the year of Jubilee from the year of Creation:

Divide **2548** of Creation by **49**. The result is **52** without a remainder. Therefore, the Jubilee is renewed the fall of **2548**. It is intriguing that the number of Jubilees from Creation to the fall of **1592 B.C.** after the battle of Gibeon, is the same as the number of weeks in a year. There are also **364** sabbatical periods in this period. If we count the start of the next sabbatical period also, the sum is **365**, equal to the number of days in a year.

Which Way Signs Point

During World War II, German special forces changed the direction that sign posts pointed during the Battle of the Bulge in order to misdirect the Allies. Retreating troops having a map that took care to check the map against the changed signs soon discovered the truth. Those that didn't ended up in the wrong place.

The Almighty believes in supplying signs pointing out the true way to go:

"And it shall come to pass, if they will not support you, nor listen to the voice of the first sign, then they will support the voice of the latter sign" (Exodus 4:8).

He gives more than one sign, so that the validity of the first signs may be checked, just like the maps used by the Allies.
Again it says:

"For there shall arise false messiahs, and false prophets, and they shall show great signs and wonders; insomuch that, if it were possible, they shall deceive the very elect" (Matthew 24:24).

Take care then that you test the signs and actually check the verifications against a multitude of witnesses. I have tried my utmost to help you do this. But you still have to read through the calculations, the Scriptures, and run the simulations.

From Egypt To Mt. Sinai

The Exodus was in the year 2508 of Creation, corresponding to **1632** B.C. Before and after the Exodus, Egypt was ruled by several dynasties at the same time. Unfortunately, the numberings of the dynasties have only a general or rough correlation to their place in history and succession to one another.

In Egypt at the time, the **15th** Dynasty Hyksos kings were ruling the eastern Nile delta region (Goshen), where Israel lived, from the city of Avaris. They were not native Egyptians. Meanwhile, the **13th** dynasty of native Egyptians ruled upriver where the delta began to narrow, as the river made its way from Thebes, which was even farther upriver. The western delta was ruled prior to the Exodus by the **14th** dynasty in Xois. Close to the time of the Exodus the **13th** dynasty was followed by the **17th** dynasty ruling in Thebes.

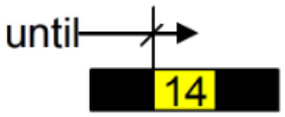
It is possible that the names of two Hyksos kings who ruled Egypt are named by Paul, "Now as Jannes and Jambres withstood Moses, so do these men resist the truth" (2Tim. 3:8). Paul does not say they were magicians. It is more likely that he named two kings of Egypt that crossed paths with Moses. The Greek name of the **15th** Dynasty Pharaoh Khyan was Yannas or Jannis. Other alternate names are Iannes, or Joannis. According to Manetho, he reigned **50** years. Redford is the Egyptologist that gives dates I deem most likely to be near correct: **1653-1614 B.C.** Jannes would have ruled at the time when Moses thought to deliver Israel by his own hand when he killed an Egyptian, and then had to flee to Midian. I have charted this without regnal years because we don't know exactly when they were. But Redford's dates need to be adjusted back in time at least **19** years to match with the Pharaoh who sought Moses' life, and to leave the tiniest space for Jambres to be the Pharaoh of the Exodus.

The nearest match to Jambres is Maaybre Sheshi. The consonants MBR occur in both names jaMBRes and MaayBRe.[22] Egyptologists have accorded him a reign of **3** to **14** years. I would only say that these identifications are likely, given what we know at the present. The future could change the optimum hypothesis. The word of the Almighty endures forever; the opinions of men are fickle.

It is possible that the **9th** plague, the plague of darkness, was caused by the eruption of the Santorini super volcano. An ash fall could have been the darkness that was felt (Exodus 10:21).[23] The Scripture says, "all the sons of Israel had light in their settlements" (Exodus 10:23). The Hebrew word *moshav* is used, which means a hamlet or settlement. If the darkness was an ash fall, then the wind patterns would have carried the ash away from the Israelite villages and dropped it on the Egyptian towns.

"[A] new find seems to confirm accounts from ancient artwork and documents that recount the destruction of coastal cities in Egypt and Palestine [sic: *Canaan*] during the **15th** dynasty (**1650-1550 B.C.**), when foreigners known as the Hyksos ruled Egypt. …[S]cientists suggest that trade winds may have carried a blizzard of ash to Egypt from Santorini, located about **700** miles (**1,100** kilometers) from Tharo. The archaeologists also theorize that the volcano created a giant tsunami that swept the lava all the way to Egypt."[24] While the Almighty could have caused darkness other ways, an ash "blizzard" would fit the biblical description well.

Figure 3



After the darkness, a **10th** plague was announced by Moses. Israel began preparing for it in **1632 BC** on the **10th** day of Aviv, the first month: it was then they chose the lamb or goat for the Passover. This they kept "until the fourteenth day" (Exodus 12:6; Figure 3). Until (עַד) means "at least as far as" in Hebrew, and "day" refers to the daytime of the 14th (cf. Gen. 1:5). Exodus 12:15 states that they should remove the leaven "on the head-most day"[25] (בַּיּוֹם הָרִאשׁוֹן), which for Passover is the **14th** day of the month. (The phrase is ambiguous and also is translated, "on the first day" when it refers to Nisan 15.) In this text it means the day heading up the feast of unleavened bread, which is the **14th.** This is because the actual Sabbath of leaven was begun at sunset on the **14th** day. (The Israelites understood that the **15th** day did not begin "until the morning" with the sunrise). That *head day* is meant is made clear by "on the **14th** day at sunset you shall eat unleavened bread" (Exodus 12:18).[26] The night of the **14th** was the same day the Passover was offered according to the Temple precept, by which the offering had to be consumed before the next day began in "the morning" (Lev. 7:15; Ex. 12:10). Therefore, the **14th** was the *head day*, and the annual Sabbath began at sunset on the **14th.**

22 Iannas and Maaybre > Jannas and jaMaaybres > Jannas and Jambres. The final "s" came about due to the Greek case ending. The addition of "ja" to Maaybre is explained as "alliterative assimilation to 'Jannes'". The connection can also be argued from Josephus' ordering "Jonias" and "Assis" (Apion 1:180-181), and connecting "Assis" to "Sheshi."

23 Measurements of Bristlecone frost rings average to 1627 B.C. Calibrated radiocarbon on Fira Quarry Trees: 1640 ±30 years; Irish (bog) Oaks: 1624 ±5 years. The Santorini olive tree gave 1613 ±13 years; 72 rings were carbon dated in sets of 13, 24, 22, and 13 rings.

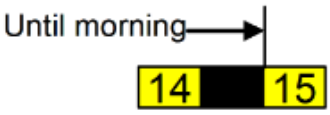
24 "Ancient Egypt Cities Leveled by Massive Volcano, Lava Find Suggests," Dan Morrison in Cairo for National Geographic News April 2, 2007. See also "'Atlantis' Eruption Twice as Big as Previously Believed, Study Suggests," Richard A. Lovett for National Geographic News August 23, 2006. Also, "Santorini volcanic ash found in Egypt," Weisbued, S., Science News, Nov. 9, 1985.

25 The "head-most day" is one day prior to the feast. It is the day of preparation before the seven days. Sometimes this is translated "preceding day" or "day before," but I think it helps to understand how the literal Hebrew gives these results. The word *Rosh* means "head" in Hebrew, and the suffix *on* is an intensifier that makes the word superlative, i.e. head-most or header day, which heads up the seven days of the feast.

26 This usage is just like the legislation for Yom Kippurim. The Day of Atonements is defined as lasting from the setting of the 9th day to the setting of the 10th day. The 9th day began with sunrise, and the next day, the 10th, began with sunrise in the reckoning of the Temple service (cf. Lev. 7:15). Yet elsewhere, Yom Kippur is defined as just the 10th day (using a sunset reckoning for the day), beginning with sunset ending the 9th day and including the night following the 9th day as part of the 10th day, as with all Sabbaths.

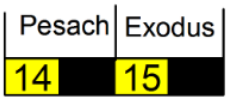
They killed the Passover "between the settings" (Exodus 12:6). The Hebrew word עֶרֶב means "setting", and הָעַרְבַּיִם means, "settings" referring to the first time the sun begins to set, "noon-set," and the last time the sun is seen at "sunset". The second עֶרֶב may be extended to the time of full extinction of astronomical twilight, however, *between the settings* still means the middle of the afternoon, since the idiom refers to the midpoint of the *settings.*

Figure 4



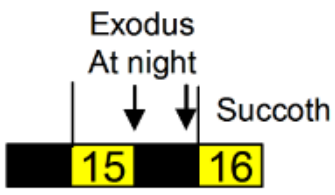
They killed the Passover at this time, and they ate it "that night" (Exodus 12:8). They were not allowed to boil it (vs. 9). They could not let any of it "remain until the morning"[27] (vs. 10) in accord with the Temple precept that it was to be eaten "the same day that it is offered", but none shall be left "until the morning" (Lev. 7:15). Any that remained "until the morning ye shall burn with fire" (Exodus 12:10; Figure 4). Therefore, the next day was counted to begin with sunrise according to the Temple precept.[28] The lamb was offered on the **14th** day before sunset, and eaten that night, the daytime offering and the nighttime eating being counted as "the same day". Such reckoning was familiar to the Israelites because the Egyptians counted each calendar day from its beginning at sunrise to the beginning of the next day at sunrise.

Figure 5



At midnight on the **14th** the Messenger of Yahweh killed all the firstborn of the Egyptians (Exodus 12:12, 29). The **14th** day was to be kept as a feast (Exodus 12:14; Figure 5). On the next day, the **15th**, they were commanded to hold a holy convocation in the anniversary years (Exodus 12:16). Also, in subsequent years they were to "observe…unleavened bread…for in this selfsame day have I brought your armies out of the land of Egypt" (Exodus 12:17). This refers to the **15th** of the month when they started to leave their houses in the morning, and lasted until the morning at the start of the **16th.** Therefore, the Israelites "departed from [the land of] Ramses in the first month, on the fifteenth day of the first month; on the morrow after the passover" (Numbers 33:3).

Figure 6

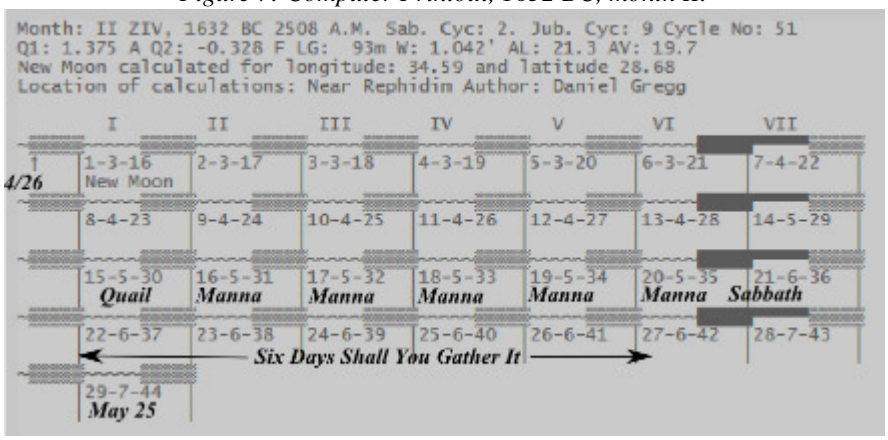


He brought them out of Egypt "by night" (Deu. 16:1; Figure 6). It was the "Night of Watches" (Exodus 12:42), the night between the **15th** and **16th** days being reckoned with the **15th** day. They went out of Egypt "at the going down of the sun" (Deu. 16:6), "by night" (Deu. 16:1). For the night after the **14th** day was the Passover, but the night after the **15th** day was the Exodus. For twenty-four hours, from the morning of the **15th** to the morning of the **16th**, 2 ½ million people and their flocks were thrust out of Egypt. They marched for twelve hours in the sight of the Egyptians, while they were burying their dead. They plundered Egypt of its treasure (vs. 36). After sunset they vanished into the night, never to return to the land of Ramses.

By the morning of the **16th** they had arrived at Succoth (Exodus 12:37). They had taken their dough in the morning of the **15th** without leaven. This they hastily baked into unleavened cakes at Succoth on the **16th** day. They had traveled on the sustenance of the Passover lamb, and now were in need of food. The day they camped at Succoth was the weekly Sabbath, the first Sabbath after the Passover, but the prohibition against preparing food had not yet been made.

Upon leaving Egypt, the people traveled for **50** days until the giving of the Law upon Mt. Sinai.[29] On the **16th** day they baked their cakes. This was the first of the Sabbaths. They crossed the "Reed Sea" (Yam Suf) at Al Nuweba Beach. They arrived in the Wilderness of Sin on the **15th** of the **2nd** month (Saturday night or possibly early Sunday), which was just after the fifth of the Sabbaths **5/10/1632**: Refer to Figure 7. The notation 15-5-30 above the word ***Quail*** means the 15th day of the month, and 5 Sabbaths have been counted after Passover, and the 30th day counting from the day after the Passover.

Figure 7: Computer Printout, 1632 BC, month II.



They gathered quail and manna for six days, and rested on the Sixth of the Sabbaths (**5/17/1632**).[30]

27 "Morning" means "dawn" or "daybreak" in Hebrew. There must be a hint of light in the east to be morning. It does not mean the nighttime between midnight and just before dawn.

28 According to the Talmud, the Rabbis required the offering to be consumed by midnight during the second Temple period. This ruling shows they understood that the night belongs to the preceding day, and is included in the same day (cf. Lev. 7:15).

29 Jebel al-Lawz, in the ancient land of Midian, now in Saudi Arabia; cf. *The God of the Mountain*, Penny Caldwell.

30 The Quail and the Manna: They camped in the Wilderness of Sin on the 15th day of the 2nd month, which was on the first day of the week, May 11th, 1632 B.C. In the first edition this was stated to be Sabbath. However, it has long since been discovered by the author that Joshua's long day (Josh. 10:12-13), which added an additional 12 hours to the day of the battle for Gibeon, causes a 12 hour offset in lunar times for previous years. The result is a change in one day of two of the four months calculated in the first edition of this book, namely Ziv 1632 and Nisan 1592. Nisan 1632 and Sivan 1632 remain unchanged due to their large arc of vision. It has further been discovered that the Hebrew text in Guggenheimer's *Seder Olam* indicates Sunday, and that I was mistaken to depend on the English (See *Seder Olam* 253.50, pg. 67-70. The English translation in Guggenheimer "corrected" the date to "the Sabbath", however, I have since read the Hebrew text, which says: אחד בשבת ≈ Sunday. Guggenheimer admits to the change, and justifies it by saying that some "Ashkenazic manuscripts read 'Sabbath' instead of 'Sunday'" (pg. 70). The updated astronomical calculation (with Joshua's long day) now shows that the 15th of Iyyar was on a Sunday, and that Guggen-

When entering the wilderness of Sinai on the new moon of the 3rd month, they traveled for three days (Ex. 3:18; 5:3; 8:27;

Figure 9: Computer Printout, 1632 BC, month III.

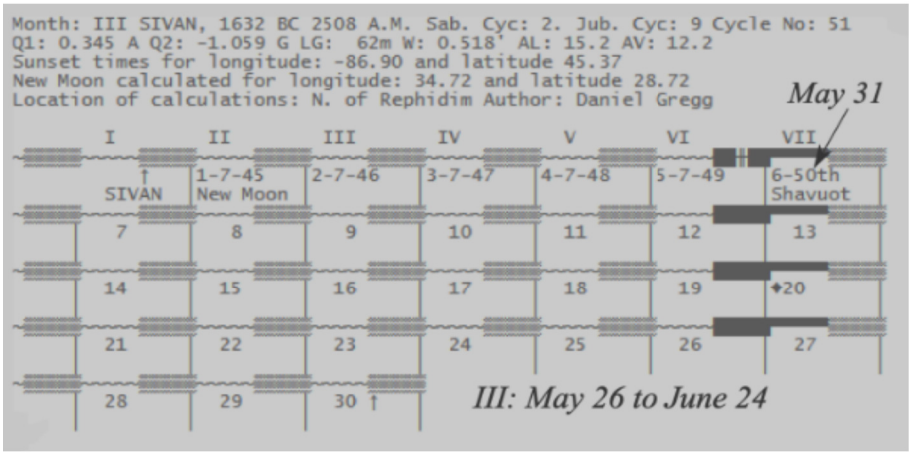
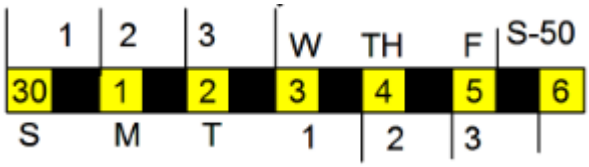


Figure 8). They prepared for a meeting with the Almighty for two days. On the 3rd day, which is the 5th day of the 3rd month, God gave the Torah to Israel at the beginning of the Sabbath, and during the daylight part met with the elders of Israel. This Sabbath day was the **50th** day on their journey out of Egypt, from the **16th** of the first month to the **6th** day of the third month. It was a journey that lasted seven Sabbaths until they entered the wilderness of Sinai. Shavuot itself was on the eighth Sabbath after the **49**

Figure 8



days. On that Sabbath the elders of Israel went up on Sinai. Afterward Moses waited six days, and then Yahweh spoke to him on the seventh day. Shavuot is book ended on both sides by regular work days, the days of journey and preparation before it, and the six days after it. From the new moon, it was three days travel plus two days of preparation, making five days before Shavuot. The sixth day this year was Shavuot.

At this point I note the astronomical synchronisms. The week of the quail and manna, the **15th** to the **21st** of the second month, correlates to a seven day week. Refer to Figure 7. The sixth day of the third month correlates to the Sabbath, as the six days following Shavuot were the regular work days that Moses waited before the next seventh day (Ex. 24:16; Figure 9). The **1632 BC** date of the Exodus is known from the larger chronology of Scripture. The synchronism is a matter of calculating the new moon of the third month for this year, and confirming that the **6th** day coincides with the Sabbath. It does. Also, calculating the second month shows that the **15th** day was the first day of the week, when the quail arrived in the camp. The manna arrived on the **16th** day of the month at daybreak, and continued for **40** years thereafter.

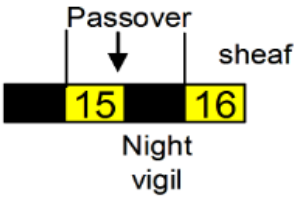
The sixth day of the third month lines up with the following weekdays around the year of the Exodus:

Year	Weekday	Aviv	Ziv	Shavuot
1636 BC	Tuesday	29	30	Sivan 6
1635 BC	Sabbath	39	29	Sivan 6
1634 BC	Wednesday	30	30	Sivan 5
1633 BC	Tuesday	29	30	Sivan 6
1632 BC	Sabbath	30	29	Sivan 6
1631 BC	Friday[31]	30	29	Sivan 6
1630 BC	Wednesday	29	30	Sivan 6
1629 BC	Monday	29	29	Sivan 7
1628 BC	Sunday	29	29	Sivan 7
1627 BC	Thursday	29	30	Sivan 6
1626 BC	Monday	30	29	Sivan 6
1625 BC	Sunday	29	30	Sivan 6
1624 BC	Thursday	29	30	Sivan 6
1623 BC	Wednesday	29	29	Sivan 7
1622 BC	Sunday	29	30	Sivan 6
1621 BC	Friday	29	29	Sivan 7
1620 BC	Thursday	29	29	Sivan 7
1619 BC	Monday	30	29	Sivan 6
1618 BC	Sabbath	29	30	Sivan 6

In **1632 BC**, Sivan **6** correctly equates to the Sabbath day. The Sabbath does not recur on the same date for the next **13** years! And going backward before **1632 BC**, it does not recur until three years earlier. The number of days in the month of Aviv (Nisan) and Ziv (Iyyar) determine whether Shavuot falls on the 5th, 6th, or 7th of Sivan. This is because the date really depends on counting 50 days, as the month lengths are not fixed.

Now, I did not determine that 1632 BC was the correct year by this method. That was done by solving the chronology on a year scale first. When I discovered that the first Shavuot was on the Sabbath, I realized that checking the chronology against this would be a critical test. As I did the calcula-

Figure 10



heimer's editing and his basis for it are incorrect.)

They received the quail on the afternoon of Sunday "between the settings" which is between noon-set and sunset, and they cooked and ate them. In the morning of the 2nd day of the week they received the manna, which was the 16th day of the month, 5/12/1632 BC. Exodus 16:5 does not say they had manna for six days before the next Sabbath. It says "on the sixth day", meaning the sixth day of the week. Exodus 16:22 again refers to "the sixth day"; we cannot infer from the references to the sixth day of the week that manna had to fall for six days before the Sabbath at this time. The Scripture does not state that it did. The reference to "six days" in Exodus 16:26 refers to the six days following the Sabbath of 5/17/1632 (the 21st day of Ziv (Iyyar), and not to six days before it. It refers also to six days leading up to future Sabbaths during the wilderness trek. They had quail on the first day of the week 5/11/1632 and manna for the other five days leading up to the Sabbath of 5/17/1632.

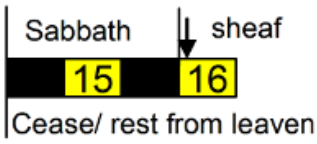
31 June 13, 1631 BC @ 17:03 UT; new moon Sivan. The arc of vision was 13.84º; and the topocentric arc of light was 18.13º. The rating for this on the Yallop scale "A: easily visible" for the new moon. All corrected for the long day. The overall result does not change even when the long day correction is neglected.

tions, I gritted my teeth and prayed that the result would come out as predicted. It did, bringing a mixed sense of relief and joy.

During the sojourn in the wilderness additional legislation was added for the observance of the festivals. A feast was enacted for the 15th day of the 1st month (Ex. 12:17), and an additional Passover[32] offering was established for the feast (Deu. 16:1-8; See Figure 10).

Unlike the first offering for the 14th, they were allowed to boil it (Deu. 16:7, Hebrew text). They could also take it from the cattle herd as well as the sheep or goats. On the 15th day they were to offer this additional Passover offering "at the going down of the sun, at the set time that thou camest forth out of Egypt" (Deu. 16:6). In accord with the Temple precept, "And the flesh of the sacrifice of his peace offerings for thanksgiving shall be eaten the same day that it is offered; he shall not leave any of it until the morning" (Lev. 7:15). Therefore, none of the flesh of the Passover festive offering was to be left "until the morning" (Deu. 16:4). Therefore, the "same day" did not end until sunrise on the 16th of the 1st month. That night all Israel is to "keep vigil" (Ex. 12:42) during the "watches" of the "night". For Yahweh was keeping the "watches" to bring them out of Egypt. Only after the night watches may you "turn in the morning, and go unto thy tents" (Deu. 16:7). After this, "six days" remain in which "thou shalt eat unleavened bread" (Deu. 16:8).

Figure 11



The 15th day of the month became a Sabbath (Lev. 23:11). From sunset on the 14th to sunset on the 15th is a Sabbath. They were not to eat any new grain until "in the day after the Sabbath" the priest waved a sheaf of it in the Temple. (Lev. 23:14; Figure 11). Now in this day, "in time to come" (Ex. 13:14) "in the day after the Sabbath" (Lev. 23:11) your son will ask, and you shall tell him of the redemption of the firstborn. Leaven shall sabbath from you from sunset on the 14th of the month until sunset on the 21st day of the month.

Now "in the day after", "from the day of bringing the sheaf of the wave offering", "seven complete Sabbaths shall be counted" (Lev. 23:15). In the day after the Passover (Josh. 5:11) seven Sabbaths shall be counted. What does 'in the day after' mean here (מִמָּחֳרַת)? It means "time to come", as when Jacob said, "So shall my righteousness answer for me *in time to come*" (Gen. 30:33) בְּיוֹם מָחָר. For "day" is used in the sense of "time" (cf. Day of Yahweh).

Therefore, in the time to come after the festival Sabbath, seven Sabbaths are to be counted, until when in the time to come after the seventh Sabbath you shall count a fiftieth day (Lev. 23:16). Similarly, you shall count "seven sevens", each seven containing a Sabbath (Deu. 16:9). The sons of Israel are to count the days, the Sabbaths, and the seven day periods as they are completed. And on the 50th day is Shavuot.

In the second year (1631 BC) Israel sacrificed the Passover on the 14th of the 1st month (Num. 9:1-3). This was Wednesday, April 29th, between the settings, i.e. noon-set and sunset (Num. 9:3, 5). Because of defilement some had to sacrifice it on the 14th day of the 2nd month, Friday, May 29. The sacrifice was to be consumed that night, leaving none till the morning (Num. 9:12).

Farming and Fallow Cycles Begin

Add 40 years to the Exodus to obtain the year before the entry into the land, i.e. **2547**. The Jordan was crossed in the spring of **2548** at the beginning of the year. This year **2548** was the first year in the land of Israel. The fall of this year, **2548**, marked the beginning of the cycles. The ½ year preceding the fall was septennial, **2548**, and this is confirmed by even division by 7: [**2548** / 7 = 364]. (The first half of this septennial year was spent conquering the Trans-Jordan in the second half of **2547**.) The first year of the next cycle corresponds to the Jubilee, because dividing **2548** by an even 49: [**2548** / 49 = 52].

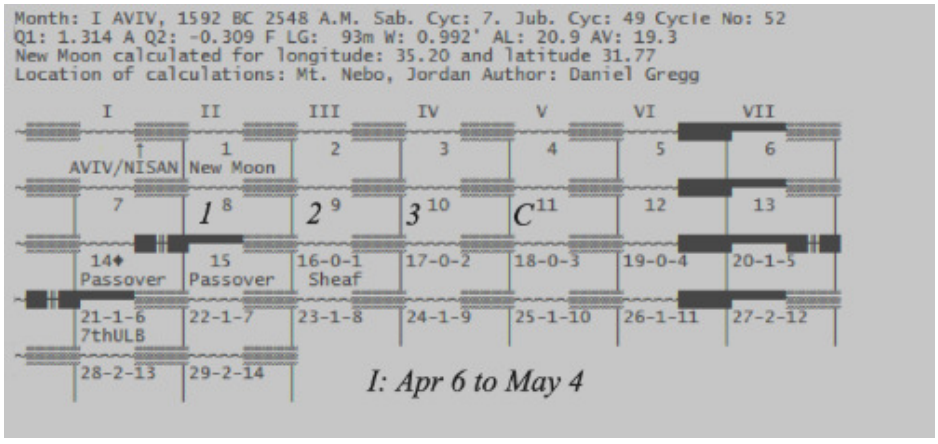
In the 11th month of **2547** Moses related the Law a second time, and gave the commandment of Deuteronomy 31:10 to read the Torah at the start of the 7th year. Since the feast of Tabernacles was already past that 7th year, the commandment to read the Torah to all Israel was first kept at the following Shavuot (cf. Josh. 8:34-35) in the same sabbatical year, and then subsequently in 2554 at the feast of Tabernacles.

When the children of Israel entered into the land, the land observed a Sabbath year (Lev. 25:2). At Shavuot in the Sabbath year they read the Torah to all Israel, and next at the feast of Tabernacles, in the year of release. Now the year of release is the year **2554**, and the feast comes in the autumn of that year. And the autumn of **2548** marks the start of the seven year cycle (col. C or E).

Crossing the Jordan

Joshua spoke to the people on the **2nd** day of the week (Nisan **8**), **4/13/1592 BC.** (See Figure 12) He told them they would cross the Jordan within three days (Josh. 1:1,11). On the **10th** day of the

Figure 12: Computer Printout, 1592 BC, month I.

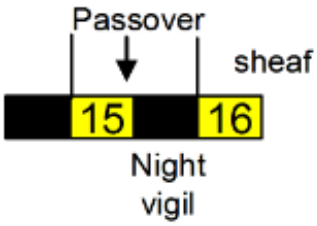


1st month they crossed the Jordan (Wednesday, **4/15/1592 BC** Julian period; Josh. 4:19). On the **11th** day they were circumcised. They spent the **11th**, **12th**, and **13th** days healing (Josh. 5:2; cf. Gen. 34:25). On the **14th** day they sacrificed the Passover (see "Chronology of Joshua 5", below) 'between the settings' (between noon-set and sunset). They ate the Passover "in that night" (according to Ex. 12:8), keeping the feast "this day" (as commanded in Ex. 12:14). See note 33.

32 The use of the term Passover is related to the yet undetermined etymology of the word. However, it must have some such meaning for the 15th as "passed over" the border of Egypt.

"What mean ye by this service? That ye shall say, It is the sacrifice of Yahweh's Passover, who passed over the houses of the children of Israel in Egypt, when he smote the Egyptians, and delivered our houses" (Ex. 12:26-27). They had to burn "that which remains of it until the morning" (Ex. 12:10). This means that at the first Passover they left in the morning. Some leftover bones might not be fully burned, but they would not stoke the fires after they left with new fuel.[33]

Figure 13

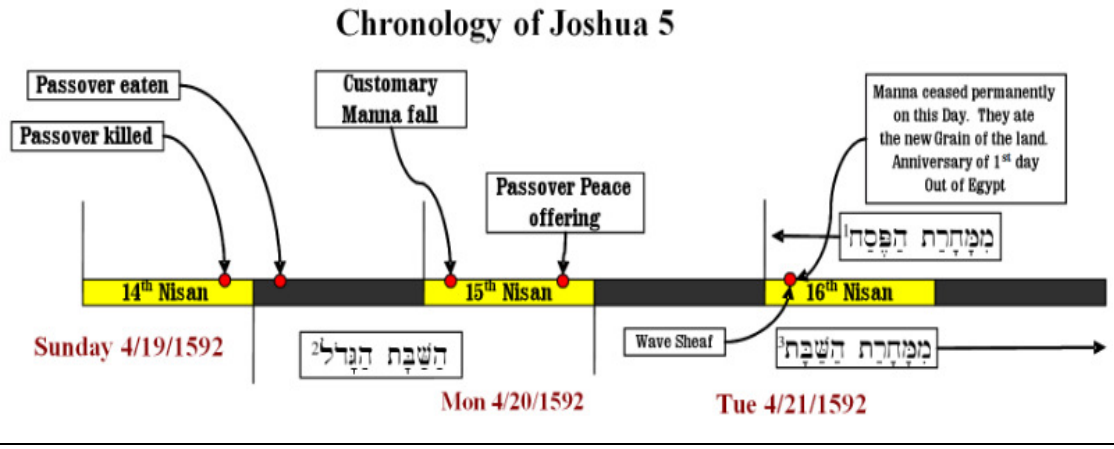


When in Egypt they did not leave their houses "until the morning" (Ex. 12:22), which is when they began their march in haste. For it is written, "And they departed … in the day after the Passover" (Num. 33:3; see footnote 33). In the first Passover they ate it with their shoes on their feet and their staff in their hand. It is allowed to celebrate the memorial of it sitting or reclining, and it is allowed to sleep after the Seder on the 14th, however, a night vigil is commanded for the 15th of the month, as they went out of Egypt in the night of the 15th day.

On the **15th** day began the anniversary of the Exodus. Near sunset on this day they sacrificed the additional Passover offering prescribed for the first day of unleavened bread (Deu. 16:4). This was the festive offering called Passover[34] in the additional legislation they received in the wilderness (Deu. 16:1-8; See Figure 13). At the going down of the sun begins the *night of watches* when the children of Israel journeyed from the land of Ramses to Succoth (Deu. 16:1; Ex. 12:42). For it was after the going down of the sun that their journey took them out of Egypt by the watches of the night. At the rising of the sun they had still been in Egypt. They had plundered Egypt while the Egyptians buried their dead (Ex. 12:33-38; Num. 33:3-5). In Joshua 5, after the night of the watches, the celebrants were allowed to return to their tents. The morning of the 16th found most of Israel sleeping late in their tents, and there was no manna that morning, but it ceased on the same day of the month that it had started. It had fallen from II.16.1632 to I.15.1592, and ceased on I.16.1592 BC. On the other side of the Jordan, they ate manna 39 lunar years, 11 months, and 24 days. After crossing the Jordan, they ate manna for 5 days. Then 24+5 = 29 days = 1 month. Therefore they ate manna for exactly 40 lunar years.

In 1632 BC, the second month had 29 days. They had no manna on days 1 to 15. On days 16-29 they ate manna, which is 14 days to the end of the month. Since 1632 BC had an Adar II, there were 11 more months in that year. There are 39 more years till the new moon of Aviv in 1592 BC. They ate manna 10 days of Aviv before the crossing on the 10th day, and 5 days afterward (the 11th to 15th). The sum is 39 years, 11 months, 29 days, which is equivalent to exactly 40 lunar years, just as it is written, "The sons of Israel ate the manna forty years, until they came to a land inhabited; they did eat manna, until they came unto the borders of the land of Canaan" (Ex. 16:35; Figure 14). The manna had ceased on the 16th day of the first month, which was the third day of the week. In that same day a sheaf of barley was waved by the High Priest, which had been reaped from a field near Jericho. It was waved in the day after the annual Sabbath that year, and after the waving the people gathered from the fruits of the land and ate them.

Figure 14: Wave sheaf after the Passover-Exodus Memorial



On the same day the count of days to Shavuot was begun, and seven Sabbaths would be counted in the 49 days. Shavuot would be on the 50th day. During this period Jericho was destroyed, and Ai. The Torah was recited according to Joshua 8, which brings us to Shavuot. After this, Israel was deceived and made a covenant with the Gibeonites. And Yahweh caused them to honor the covenant, because they had sworn in the name of Yahweh (Josh. 9:18).

33 With respect to the Temple, the day begins with the sunrise, "And the flesh of the sacrifice of his peace offerings for thanksgiving shall be eaten the same day that it is offered; he shall not leave any of it until the morning" (Lev. 7:15). It was allowed to consume the sacrifice in the night following the day, which was counted as "the same day," and not permitted to consume it after "the morning", which was counted as the start of the next day. The Rabbis did not permit eating the sacrifice after midnight during the Second Temple.

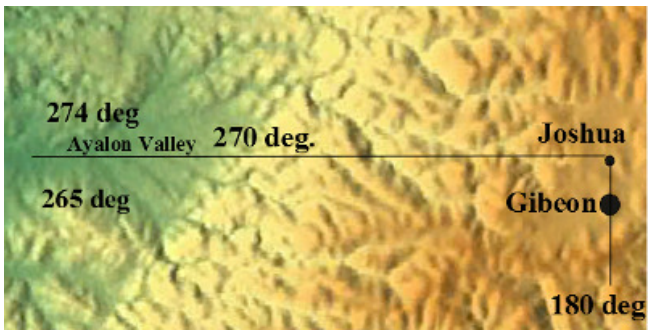
34 The word Passover seems to be associated with a unique word for "haste" (Ex. 12:11; Deu. 16:3, בְּחִפָּזוֹן.), i.e. to pass by or hasten by quickly. If the consonants are reordered to פזח, and the ז=ס, then we have a relation to פסח. They were to eat the redemptive meal in haste on the 14th because God's judgment was coming hastily on Egypt, but on the 15th the "haste" (Passover) is associated with the unleavened bread, and the hasty departure from Egypt on that day. Therefore, the term פסח was applied to the festive offering for the 15th.

The Bridge Over Joshua's Long Day

It is necessary to give an account of Joshua's long day here (out of order), since it is the basis of much that follows. Joshua's long day affects all astronomical calculations before 1592 BC, and neglect of it results in errors for solar and lunar eclipses. By using a correction for the long day, we are able to synchronize eclipses before 1592 BC with their historical records. Without the correction scholars will surely compute eclipses that never happened and fail to locate the ones that did happen. The eclipses that need correction converge on 1592 BC from before that year, and those that need no correction converge on 1592 BC from after that year.

When Israel entered the land in 1592 BC, they entered into an alliance with the Gibeonites, who were subsequently attacked by a Canaanite coalition. Israel came to their defense, and in the midst of the battle Joshua commanded that the sun should stand still over Gibeon and the moon over the valley of Ayalon, "O sun, stand still on Gibeon, and moon in the valley of Ayalon"

Figure 15: Bearing



(Josh. 10:12). "Then the sun stood still, and the moon stood...and the sun stood in the middle of the heavens, and did not hasten to set according to a perfect day" (Josh. 10:13). "And there was no day like that one before it or after it when Yahweh listened to the voice of a man; for Yahweh fought for Israel" (Josh. 10:14). It is my belief that the long day still fights for Israel, even after it is long over, and that it will prove to be the Rosetta Stone of astronomical chronology.

From the account, it is plain that the sun stood at culmination, which is high-noon or 180º. Furthermore, Joshua was standing to the north of the city and looking south (Figure 15: Bearing). For only from this vantage point would the sun appear to be over Gibeon (*lat* 31.50.47 N, *lon* 35.11.06 E.) If Joshua was one mile north of the city (31.51.47, 35.11.06), then when one looks straight west 270º, a projected line will bisect the valley of Ayalon, passing between Nof Ayalon and Latrun Monastery. Therefore we should look for the moon to be due west (270º).

Now, in Joshua 8 they celebrated the festival of Shavuot and read the Torah, which is in month III, and this year on the 6th day of the month (June 9, 1592 BC). The battle of Gibeon cannot have been about two weeks later. The moon set on June 24 at about 258º before the noon hour, and every day before that the azimuth was less: 258º misses the valley of Ayalon and runs down the south ridge bounding the valley. On August 23rd the moon was about 278º. This line runs well north of the valley of Ayalon. This leaves us with 3 days in July to consider, the 24th to the 26th. On the 23rd the moon would have been set at the end of Joshua's long day before the sun started moving again. On the 26th the moon is too high to be said to be over any particular location. The 25th is possible, but not ideal. The moon starts at 268º 57' and moves 51' sideways to 268º 7' and 6º 9.5' up, starting at 22º 1' and ending at 28º 11' alt. These numbers have two flaws over the 25th. First, the moon is still too high to be ideally over Ayalon, and second, it is not perfectly west.

On the 24th the moon starts at 10 degrees and ends the long day at 16 degrees altitude, which is just right. And it moves sideways the least amount, only 45'. Since the moon is 32.5' wide at this time, it does not noticeably appear to move sideways as it is so slight. It appears to "stand up," which is the correct interpretation of "stood" in "and the moon stood." A different term is used for the sun "stood still." The moon "stood up," which is what we expect if the miracle is economical. The earth's rotation stopped, but the orbital motions of the earth and moon continued.

Therefore, to correct for Joshua's long day, it is only necessary to reset the rotation of the earth so that the sun stays at the meridian for 12 hours, which is a perfect day, hence $\Delta T_e = \Delta T - 43200$ **seconds**. This can be simulated in Stellarium 0.12.4 First set the program using the standard **ΔT** (a=0, b=0, c=32, y=1820, l=−26), the date at −1591.07.24 and the time at 9:35:23 UT. Set location to 31.51.47, 35.11.06. This will represent the position at the end of Joshua's long day, which is the last point in time which may be calculated going backward from the present without making any correction for the long day. The sun's position is 180.00.38 and 80.55.40. The 38 arc seconds here are machine error. Stellarium will not compute in fractions of a second. The moon's position is 10.03.24 and 270.22.26.

Next, step the program backward. Change the standard **ΔT** to (a=−3600, b=0, c=32, y=1820, l=−26). It now takes 1:00:01 hr to return the sun to 179.59.54 (180°).

The times and positions are as follows:

Time Steps	Sun Pos.	Correction	Time
+0	180.00.30	a=0	9:35:23
01:00:01	179.59.54	a=−3600	9:35:22
01:00:00	180.00.45	a=−7200	9:35:22
01:00:01	180.00.09	a=−10800	9:35:21
01:00:00	180.01.01	a=−14400	9:35:21
01:00:01	180.00.25	a=−18000	9:35:20
01:00:01	179.59.49	a=−21600	9:35:19
01:00:00	180.00.41	a=−25200	9:35:19
01:00:01	180.00.05	a=−28800	9:35:18
01:00:01	179.59.30	a=−32400	9:35:17
01:00:00	180.00.21	a=−36000	9:35:17
01:00:01	179.59.46	a=−39600	9:35:16
01:00:00	180.00.38	a=−43200	9:35:16
12:00:07		−12:00:00	+0:0:07

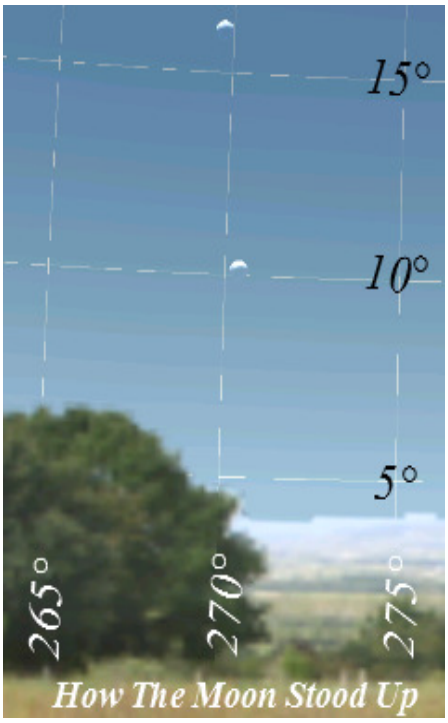
Clearly the time is 7 seconds too much. The reason is that we have run up against the equation of time. At aphelion in the summer on this date the sun takes only 23h 59m 46s from one culmination to the next (due to the earth moving slower in its elliptical orbit), which is 14 sec less than 24:00:00. If we arrest the rotation of the earth 12 hours, then the discrepancy is half that amount, or 7 sec. It is not possible to let time pass in the software without causing the earth to rotate. Therefore, it is impossible to correct the discrepancy via **ΔT**. It can only be done by subtracting 1' 51" from the longitude of the observer (0.03083º), in which case the time registers exactly 12 hours.

12:00:00	180.00.38	a=–43200	9:35:23

Thus, if the correction is made by **ΔT**, then one must adjust the longitude of the observer by −1' 51" (−0.0308$\overline{3}$º) for exact observations. I have generally neglected to make this adjustment in most cases as it has no effect on the results.

Another way to correct for the long day is to simulate the rotation the earth by the amount it will turn in 43200 seconds (12 hours). A 360º rotation takes 23h 59m 45.2s on this day (see above). This is 86385.2 sec./360º rotation = 239.95$\overline{8}$ sec/deg. And 43200/ 239.95$\overline{8}$ = 180.0308º = 180º 1' 51". The long day therefore put the map out of place by this amount over a 12 hour period. 180º 1' 51" is the number to subtract. The number to add is 179.96916º. I simulate the rotation by transposing the observer's coordinates.

Figure-16: Moon Standing



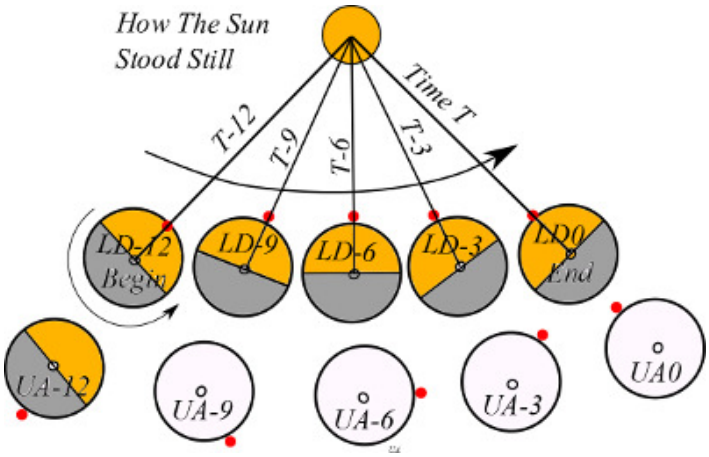
We are working backwards from the end of the long day here. Rotation is the longitude of Gibeon. The times start on July 24, and end on July 23rd.

Rotation	Sun Pos.	Time	Net
35.11.06	180.00.30	9:35:23	0
50:11:06	180.01.21	8:35:23	15.0º
65:10:43	179.59.59	7:35:23	29.99º
80:10:34	179.59.58	6:35:23	44.99º
95:10:26	180.00.03	5:35:23	59.98º
110:10:17	180.00.02	4:35:23	74.986º
125:10:08	180.00.01	3:35:23	...
140:09:59	180.00.00	2:35:23	...
155:09:50	179.59.59	1:32:23	...
170:09:41	179.59.59	00:35:23	...
185:09:32	179.59.58	23:35:23	...
200:09:24	180.00.03	22:35:23	...
215:09:15	180.00.02	21:35:23	179.9691
179.96916º	0º movement	12:00:00	

The longitude was incremented going east. So 179.96916º is the number to add. The number to subtract if going the other way is: 180.03084º. The variations in the sun's position are all machine error. In theory the value is 180.00.00. Generally I neglect the 7 sec difference caused by the equation of time, and simply use −43200 for **ΔT** or 180º for a longitude shift. The error in the uncertainty of **ΔT** is much greater than the 1' 51" difference (i.e. 7 seconds vs. 1 sigma of 2196 sec for **ΔT** in 1592 BC). These mechanics can certainly be refined and explained better, but this is a job for dedicated experts in solar system mechanics. The software certainly does not make it easy to correct for Joshua's long day. With EmapWin I must use a coordinate shift since it limits **ΔT** variations to ±10000 sec.

To correct for the long day, the observer's location must be transposed in longitude (where east longitude > 0) by subtracting 180.03084º or adding 179.96916º. After doing this, a program may tell you the wrong day of the month by one day. So to discover the date, use the **ΔT** method −43200 seconds, (which is the same as taking −180º off the longitude of the observation point). Then correct by −0.03084º.

Figure-17: Sun Stopping



During Joshua's long day the altitude of the sun changed minutely. This seasonal effect would not be noticed by anyone since it was only about 3.6 arc minutes. The sun itself was 31.75 arc minutes in diameter on this day. The sun moved from about 80.92° to 80.86° during the 12 hours, or 0.06°, but the sun itself is 0.53° wide. Therefore it settled down over Gibeon a distance equal to 11% of its diameter. The moon, on the other hand, "stood," i.e. appeared to stand up 5.92°. Only a dedicated astronomer watching with precise instruments would have noticed the small change in the sun's altitude over Gibeon. However, an ordinary person would have noticed that the moon was just above the treetops in the direction of Ayalon at 10° when the sun stopped at midday. *How The Moon Stood Up* illustrates how this happened.

The moon started at 10° at the beginning of the long day. It ended at 16° at the end of the long day (Figure-16: Moon Standing). The landscape used for *How The Moon Stood Up* is a stock background to give one an idea of what the observer would see.[35] After the sun stopped for about an hour at noon, the Israelites be-

35 The moon's phase is 36.5% illuminated at the end of the long day. The image was created by compositing two Stellarium 0.12.4 screen shots, and then adding in larger degree labels in Inkscape 0.48. The atmosphere setting was on to simulate daylight. The moon is clearly visible as a waning gibbous.

low would begin to give the sun and moon their utmost attention. And those who heard Joshua's prayer would be watching right away. The moon's rise in the sky over the next 12 hours could not be missed.

I have drawn *Figure-17* to help explain the orbital mechanics of the sun stopping. The drawing is not to scale, and is intended to show geometrical and temporal relationships only. The sun is the orange ball at the top. The large arrow represents the direction earth revolves around the sun looking down from north. The small arrow represents the direction of the earth's rotation looking down from the north pole. Both directions are counter-clockwise. The end of Joshua's long day is shown as LD0 (LD0 for Long Day at time 0) and UA0 (for uniformitarian assumption at time 0). The earths at LD0 and UA0 are synchronized. The red dot represents the longitude of Gibeon at time = 0. Under the uniformitarian assumption, the earth moves backwards in its solar orbit, and backwards in time to UA-3 hours, UA-6 hours, UA-9 hours and UA-12 hours respectively. The long day, however, keeps Gibeon pointed at the sun as shown five earth positions from LD0 to LD-12 at 3 hour decrements in time.

Finally at T-12 hours compare the location of Gibeon under the uniformitarian assumption, UA-12, with the long day position at LD-12. At UA-12 Gibeon is pointed at the opposite constellations as when the long day happened at LD-12. Therefore, if the moon were to be along the cord T-12 between the sun and earth, it would cause a solar eclipse at Gibeon at LD-12 (the moon wasn't perfectly aligned, I know, this is only to get you to think how the long day affects an eclipse). Under uniformitarian assumptions, at UA-12 the solar eclipse would not be seen at Gibeon. Or consider a lunar eclipse opposite the earth and sun. It would be seen at UA-12, but would not be seen at LD-12.

Legends of Joshua's Long Day

The tale of an Egyptian long day is supposed to be based on a translation of Egyptian hieroglyphics "from the Cercle Scientifique et Historique, France and Belgium. It is presumably taken from among Crombette's three volumes of *Verdique Historique de l'Egypte Antique*."[36] The story, which I will not repeat here, could be a fraud. Among other errors and idolatry, it claims the sun "had remained low on the horizon." This contradicts the scriptural details for the long day. In the most westerly part of Egypt, the sun's angle would be only 10º short of reaching high noon, which is not anywhere near the horizon. The account also vilifies Ramses as the oppressor of Israel. But Ramses I ruled over 300 years after the Exodus. If the story is not a complete fraud, then it may be inspired by Joshua's long day. But I really doubt that story is a genuine legend.

Figure 18: Where Day and Night Stopped

Another account, this time supposedly from China, says that the long day was in the 2554th year of the world. But the long day happened in 2548. The tale also claims Yao was Chinese emperor. But this Yao reigned about 2300 BC, which is 700 years before the long day. I doubt very much that this story was an original Chinese legend. It seems fraudulent.

On the other hand, there are certain myths and legends that are clearly not frauds in the sense that some "pious" Christian made them up. The sun-catcher myths from North American Indians are real Indian myths or legends, which means they may be inspired by real facts, but they carry little historical credibility; one would not want to stake one's life on which realities inspired the myths. Any allusion to historical reality in these stories is enmeshed in a matrix of fairy tale plot lines. The Joshua account is all we need, to know that the sun stopped over Gibeon. I have composed *Figure 18: Where Day and Night Stopped* from Home Planet 3.3a to show where the long day vs. the long night was. We will find that the myths speak of a long day or a long night, but they are not consistent with the boundaries of the long day vs. the long night, or long twilight, or long sunrise, or long sunset.

An Ojibwa tale relates that a boy "set out a little after midnight, and fixed his snare on a spot just where the sun would strike the land as it rose above the earth's disk, and sure enough he caught the sun, so that it was held fast in the cord, and did not rise. The animals who ruled the earth were immediately put into a great commotion. They had no light." Finally a mouse "succeeded in cutting the cord with its teeth, and freeing the sun."[37]

The Ojibwa homelands are on the borders of Lake Superior. If one puts in the coordinates for Duluth, Minnesota at the western end of the lake, on the long day (N 46° 46' 5.00", W 92° 5' 59.01"), one will discover that it was twilight. This is because it was just 39 minutes before sunrise. In the source from Olcott, it does not say there was a long night with no light in so many words. Rather, Olcott is relating "sun-catcher" myths. They read like fairy tales that children make up by themselves, full of obvious fiction. At best, we can say that in this part of North America, the sun stood still at dawn, and that the stories contain a fictionalized memory of the event. However, we don't know where the Ojibwa ancestors were in 1592 BC.

Olcott relates a Wyandot Indian tale about the sun being caught in a trap. The tale ends when a mouse releases the sun: "and the sun released from the trap went again on his way, but while he was held in the snare, day failed down here on earth." Now it so happens that the sun was stopped just above the horizon where the Wyandot's lived north of lake Ontario near Coburg, Canada (N 43° 57' 34.01", W 78° 10' 4.00"). Perhaps they migrated from the west since 1592 BC. But don't count on it. They or the tale could have come from any direction. The long day or night experienced by their ancestors is certainly a source of possible inspiration for this tale.

In another myth, from the Dogrib Indians, the story goes "the sun appeared as usual in the heavens in the morning, but at noon it was caught by the snare which Chapewee had set for the squirrel, and the sky was instantly darkened." His family said,

36 The source cited by my source.

37 Olcott, W. T., 1914. *Sun Lore of all Ages: A Collection of Myths and Legends Concerning the Sun and its Worship,* (New York: G. P. Putnam's Sons).

"we no longer enjoy the light of day." This time a ground mole releases the sun, but not without being burned.

The coordinates for the Dogrib (Tlicho) myth are in the Canadian Northwest Territories at Gameti (N 64° 6' 44.02", W 117° 21' 13.01"). On the long day, the tip top of the sun was "caught" (stopped) just peeking above the horizon at sunrise for 12 hours. So the sun was not caught at noon. All we can justly suppose here is that the story may have been inspired by the long day, and nothing more. The astronomy of the matter is clearly incorrect in the myth.

The Omaha myth "How the Rabbit Caught the Sun in a Trap" reads like an Aesop fable, "Once upon a time a rabbit dwelt in a lodge...Rising early the next morning he inspected his trap, and found he had caught the sun....and from that time the rabbit has had a singed spot on his back between his shoulders." (Olcott, pg. 218). The myth may imply the sun was caught just before dawn, but the implication may be easily attributed to the art of the myth maker.

Another thing worth noting is that these myths were recently collected. There is no telling where they were brought from in the migrations of various tribes. At best we may say that some myths, somewhere, were inspired by some real events. But the human mind is so good at myth making that we cannot place any historical value on them. Again, are not all myths inspired by reality in some way or another?

Another myth, this time from Mexico, contradicts the astronomy, "But the sun, despite his brilliant light, did not move; he hung on the edge of the sky, apparently unwilling to begin his appointed task"[38] We may presume that this tale traveled to Mexico from the places to the east where the sun would have hung above the horizon.

Other myths we can show began as pure fraud. The one told by Harold Hill is that a NASA computer bug was somehow related to the long day.[39] But astronomical computer software cannot detect the long day on its own. It will simply give incorrect results prior to -1591.07.24 9:35:23 UT which will be believed by the users and programmers, and there will be no "bug"; it is simply a case of unwittingly programming the computer to give incorrect results. And no one will know they are incorrect unless they have a collection of eclipses and accurate chronology to go with them dating before the long day. In that case it will not be a computer glitch, but simply that what the computer computes is not what the historical record says.

So Hill's tale is a fraud.

Other Possible Astronomical Discontinuities

It is my belief that the circumstances of Joshua's long day were carefully described so that we could calculate around it. And it appears that the evidence confirms this assumption. Therefore, we must briefly inquire into whether other discontinuities exist. One that is often suggested is the sign of Hezekiah.

The shadow sign on the steps portending Hezekiah's recovery need not be treated as a celestial mechanical discontinuity since light may be bent causing a shadow to move without requiring the source of the light to move, and no mention is made of the sun itself. The effect may be explained by atmospheric causes. Further, the account gives insufficient information to make a determination of the time length of any effect this sign might have had on ΔT. Therefore, the Almighty did not intend for this sign to make a difference. We can only observe things such as they are, since an adjustment cannot be justified.

The time of the flood is another chance for a discontinuity. We can be reasonably certain that the earth rotated about the same axis then as it does today back to a few centuries after the flood. The Great Pyramid of Giza was built after the flood with its sides aligned to north-south and east-west. The alignment is almost perfect deviating only about 3 arc minutes ($3/60^{ths}$ of a degree), and it is possible that that much deviation is due to post flood residual continental drift. (We can also be certain that the angular momentum of the earth and the equatorial bulge will keep its axis pointed in one direction.) However, as with Joshua's long day, the flood account gives us the timing details we need to get past that point, and these details show that there is no celestial mechanical break during the flood.

The months of the flood year, and our ability to calculate them correctly also shows no discontinuity that would upset the timings of the sun and moon. Likewise, the coincidence of the equinox with the creation of light on the first day, and the new moon on that day show that the lunar and solar timepieces created on the fourth day have ever been keeping correct time since they were "set" at creation. The Scripture tells us that the sun and moon were created to provide light and to keep time.

One can even argue that Joshua's long day is a divine clock correction. When humanly built clocks start to drift off of the correct time, then we reset them. The long day reset has the effect on clock time as follows.

Without the long day[40]		With the long day
4139 BC	1730 min	980 minutes
2483 BC	901 min	116 minutes
2173 BC	720 min	1 second
1592 BC	565 min	-194 minutes
1591 BC	556 min	557 minutes

Because of the long day, the temporal displacement from creation is 980 minutes instead of 1730 minutes if the long day had not happened. Perhaps there will be another long day sometime to erase even that discrepancy. There are other possible sources of discontinuity:

Earth's axis rotates in a great circle over time, called precession. This takes 28,771 years to complete one circle. Therefore, a full circle has not yet been completed. The gravity of the sun and moon are the forces that cause the precession.[41] The earth's axis has a smaller wobble called Chandler wobble. Every 433 days the axis wobbles 20 feet at the pole. A JPL physicist has finally worked out the cause: ocean currents and weather patterns. If the sun was not keeping the currents and weather going, the wobble would die out in about 68 years by an effect called damping. In the absence of driving forces the wind and the water would calm down and become still. Then the mass would even out and the wobble would stop all in 68 years. The axis would point in the direction at the center of the wobble.

If an unbalancing force is applied to the earth internally then this would serve to increase the Chandler wobble, which is independent of the precession wobble. The extra wobble would dissi-

38 Caso, A. 1937. *The Religion of the Aztecs*, (Mexico City: Popular Library of Mexican Culture, Central News Co.), pp. 15-16.

39 Hill, H. "How to Find a Missing Day," *How to Live Like a King's Kid*, (Baltimore: Logos), Chapter 13, pp. 65-77.

40 These are back of the envelope calculations.

41 If the external forces were removed that cause precession of the equinoxes, then the earth would dampen out the precession wobble and rotate about the central axis of the precession.

pate when the unbalancing forces ceased and the unbalanced mass redistributed by isostatic adjustment. At the time of the flood continental drift created a temporary imbalance of mass which would induce the axis to wobble in a wider circle changing the obliquity of the ecliptic slightly. The unbalanced mass would rebalance and the wobble would return to its antediluvian radius. Any perturbation caused by the flood would be dampened out over time, at the most 500 years. In the end it would be as if it had never happened, except celestial positions would be shifted by the amount of the wobble during the time of the wobble. When doing astronomical retro calculations back to the epoch of the wobble, the calculations would be valid before and after it, but would be in error during the wobble epoch.[42] The imbalance could affect stellar positions, and the boundaries of solar eclipses to the extent of the wobble. Lunar eclipses and new moon timings would not be affected.

On the other hand, if the earth lost significant mass at the flood or the mass inside the earth were redistributed in a significant way then the earth's rotation rate could be altered. Likewise, the pole wobble or precession rate could be affected. Yet it is still possible that such forces were damped out or canceled out and that the earth's movements did not significantly depart from the uniformitarian assumption except at the epoch of the disturbance. Since we have the calendar of the flood year in Genesis, and since it agrees with uniformitarian calculation taking account of Joshua's long day (**2483.II BC $-20+32T^2-43200$; l=−26, Espenak's NASA equation**), it may be reasonably concluded that either the celestial mechanics were not disturbed so much, or that the effects of the disturbance took effect after the flood year and were damped out thereafter such that the uniformitarian assumption was not upset. The only other option is that the ability to calculate the correct calendar for the year of the flood is a pure coincidence, and the probability of this must be deemed small.

Working back from the flood, we have no record of a disturbance that could upset the celestial mechanics back to Creation. Therefore, we may simply calculate positions within acceptable error values based on uniform motion. The data point of the flood calendar thus overcomes the known uncertainties introduced by the flood dynamics. A historical record is always better confirmation than calculations plus assumptions. We don't truly have a historical record of which day of the month the moon was created on. Was the moon full, new, or first quarter on the day of its creation? Nor do we have a historical record of where the spring equinox would have fallen. The best answer is simply that which calculation would yield assuming no disturbance between creation and the flood. The assumption here is reasonable because Scripture 1. seems to give us data where we can assume a disturbance, and 2. falls silent where there isn't a disturbance.

42 If one were to spin a gyroscope and then put it on a stand so that it precesses, then one could in theory take account of its position at time t_2 and use knowledge of the precession period to calculate its position at an earlier time t_0.

Joshua's long day does not invalidate all astronomical dating before the battle of Gibeon. Only dating involving the position of the moon is invalidated: solar eclipses, lunar eclipses, and new moon calculations. Dating based on planetary positions is not affected. Solar and stellar alignments are also not affected. The reason is that the apparent position of the moon moves in 12 hours whereas nothing else moves far enough to significantly[43] spoil a non-lunar dating. Therefore, I distinguish astronomical dating which involves the moon (eclipses and new moons) from that which does not (stellar and planetary). I call dating using the moon *lunar astronomical dating LAD*, and dating which does not use the moon: *non-lunar astronomical dating NLAD.* These terms must be further defined according to their time indexes:

AL: LAD after the long day.
CL: corrected LAD before the long day.
SB: secular LAD before the long day, i.e. uncorrected.
WA: all dating methods *without* LAD.[44]

The middle chronology is consistent with NLAD, AL,CL, and WA dating. It is not consistent with SB dating precisely for the reason that SB dating fails to correct for the long day. Therefore the middle chronology has a workable Venus solution, but the SB month-lengths do not work out for it. CL month-lengths work out well enough.

Because the middle chronology fails SB dating, Peter Huber has adopted a high chronology that better fits it, and Hermann Gasche and Vahe Gurzadyan have adopted an ultra short chronology that better fits SB dating. Both fits are considerably messier than the fit achieved with CL dating and the middle chronology.

When the incorrect SB dates are removed from the picture the middle chronology wins the contest, and this is why historians prefer it who use WA methods. When CL dating is introduced to the middle chronology, only some minor adjustments are needed and we arrive at near absolute dating for non-biblical chronology that parallels absolute biblical dating.

Key Periods	Middle Dates	My Dates	Adjustment
Akkadian	2234-2154	2230-2150	-4 years
Ur III	2112-2004	2113-2005	+1 year
Isin	2017-1793	2010-1789	-7 years
Babylon I	1894-1595	1886-1588	-8 years
Hammurabi	1792-1750	1784-1742	-8 years
Ammizaduga	1646-1626	1638-1619	-8 years
Sack of Babylon	1595	1588	-7 years

My dates are nearly equivalent to the *low* middle chronology, and here the fit agrees even better. It is the one based on Venus solution 1638 BC. The deviations are +4, +9, 1, 0, 0, 0, 1 respectively. These deviations are acceptable because Isin is not absolutely linked to Ur III, and Ur III to Akkad. But the historians were close enough. When we bring in CL astronomical dating, which is corrected for Joshua's long day, then the extremes of Huber and Gasche are not needed to explain the astronomical texts.

This does not mean that I have to explain all the EAE series texts perfectly. Gurzadyan makes the point for us, "if the conclusions are indecisive from the standpoint of the questions originally posed, they may still allow certain conclusions to be excluded by demonstrating discrepancies between the alleged records and the actual events."[45] Therefore, I need not "solve" every discrepancy, but I only need to show that the situation is far less discrepant than may be supposed by those with no faith that the long day really happened. This is difficult because it requires my readers to know the alternative chronologies and the sum of unexplained discrepancies for each one. Otherwise, the reader will have to take my word for it that these results leave fewer unexplained discrepancies. It should be apparent to anyone, however, that we are miles ahead of the game by simply being able to match the records with the middle chronology.

43 There is a minor effect on sidereal timings. Neglect of the long day results in a two minute error.

44 Written history, synchronisms, king lists, radio-carbon, tree-ring chronology, and any other method that is not based on astronomical calculations involving the position of the moon. This category includes NLAD.

45 "On the Astronomical Records and Babylonian Chronology," Akkadica, v. 119-120 (2000), pp. 175-184, Gurzadyan.

The first world empire was created by the war-mongering king named Sargon of Akkad, fittingly called the "King of Battle" in a famous poem. He was the first imperialistic megalomaniac bent on world conquest. His standing army was just over 5,000 men.

With the exception of Nimrod, before Sargon, there were only "kings" of single cites and their surrounding estates (called *ensi*). Really, these "kings" were mayors, and it is quite likely that they were elected and served for short terms like a president or prime minister. Stretching these mayors out into long reigns of dynastic kings unjustly lengthens the chronology. Perhaps the last few mayors of Kish were really kings, in the sense that they intended to continue in office till they died. The Sumerian king list says "kingship was first at Kish." However, we must keep in mind that even a king list can represent a short time. A good example is the 13th dynasty of Egypt, where the terms were only four years for quite a long time, and that appears to be by some kind of democratic design.[46] In any case, it would appear that the history of Kish prior to Sargon fits into the 53 years between the curse of Babel and the legendary overthrow of Kish by Sargon. This means the king list has been inflated.

There are four dynasties of Kish before Sargon. The first numbers 23 names with outrageous reign lengths ranging from 140 to 1200 years. The second has 8 names with reigns from 81 to 360 years. In the third, a woman reigned 100 years. From the fourth dynasty containing 8 names, there are still outrageous numbers like the 400 years for Ur-Zababa whose cup-bearer was supposed to be Sargon. Even the total of 40 names is suspect. It seems most of them would have had 1 year terms in the time available. If not, then the list has collected all the important villages surrounding Kish into consecutive lists, which were later assumed to be consecutive rules of kings, either by accident or with motivation to exalt the antiquity of Sumer. The inflation of time appears to stop only with the Akkadian Empire, at a point in history where myth transitions into legend, and then after into a semblance of history.

The Sumerian king list gives the dynasty of Akkad at 181 years.[47] Further, we have a synchronous Gutian king list leading us down to the third dynasty of Ur. The last Gutian king is expelled by Utu-hegal in 2120 BC. To anchor the Akkadian portion of the Sumerian king list, we have one solar eclipse and several lunar eclipses which can be located, parsimoniously synchronized to the the king list with the following ± allowances. I consider only two of the eclipses sufficiently unambiguous to assign a confirmation value. The others are dated, but I assign no confirmation value.

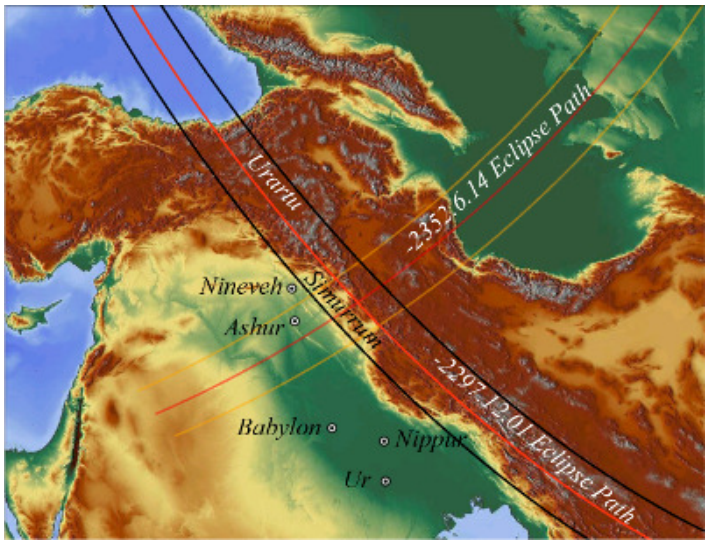
2298 BC	Sargon	±56	*šar tamhāri*
2277 BC	Sargon	±?	EAE 21.VI
2223 BC	Naram-Sin	±?	EAE 21.VIII
2222 BC	Naram-Sin	±?	EAE 20.I
2193 BC	Shar-kali-sharri	±0	EAE 21.I
2150 BC	Shu-durul	±?	EAE 18.XI

In order to calculate these eclipses, it is necessary to correct for Joshua's long day. This is done by shifting the longitude -180.03084º or by subtracting 43200 seconds from **ΔT.** Then adjust the longitude by -0.03084°. The results are sufficiently definitive such that with the Sumerian king list we may nail down the entire dynasty of Akkad exactly.

THE ECLIPSE IN THE LAND OF UTA-RAPASHTIM

2298 BC Sargon of Akkad *šar tamhāri* 'King of Battle'

Figure 19: Sargon's Eclipse



The text reads "62 The sun dimmed, 63-64 the stars sallied forth against (*or* for) the enemy"[48] or "the sun became obscured, the stars came forth for the enemy"[49] Erica Reiner comments, "a celestial portent that must refer to a solar eclipse during which the stars became visible, an event that was evidently to be interpreted as the stars portending victory for Sargon against his enemy." Sargon's enemy was in the land of "Uta-rapashtim," which has been taken as a variant or corruption of Uta-napishtim, who is Noah in the Gilgamesh Epic. Thus, this battle took place in the "land of Noah.":

"He took control and the army he mustered" (42-43)
"The strong bulls, the warriors he put into action (44)
"40,000 were they, filled with battle" (45)
"Those from the city, threefold heroic," (46)
"those of the escort" (47)
"adorned with a gold breastplate" (48)
"from the marketplace of Hassum" (49)

46 When the reigns of a king list are lacking or suspected to be corrupt, it is standard practice to assign 20 or 30 years to a reign. The biblical chronology falsifies this assumption in the case of the early Sumerian king list.

47 *The Sumerian King List*, Thorkild Jacobsen, 1939, pg. 24,115. The antediluvian part of the Sumerian king list may be a corruption of the ages of eight of the pre-flood patriarchs, wherein a Sumerian scribe mistook a decimal notation to be a base-60 notation, "The Antediluvian Patriarchs and the Sumerian King List," Raúl Erlando López, *CEN Tech. J.* **12**(3):347-357. It is likely that all of the dynasties between the flood and that of Akkad ruled simultaneously, and are not to be taken consecutively, as it has been proven in later portions there are large overlaps. It is also likely that the exaggeration in the antediluvian part has contaminated the numbers before Akkad to some extent.

48 "62 *id-ḫi-im ša-am-šu-um* 63 *ka-ak-ka-‹‹ak-ka››-bu ú-ṣú-ú* 64 // *a-na na-ak-ri-im*" (page 70-71, *Res Gestae Sargonis*, Legends of the Kings of Akkade: The Texts, Joan Westenholz).

49 pg. 11, "Astral Magic in Babylonia," Erica Reiner, 1995, The American Philosopohical Society, Vol. 85, Part 4, 1995.

"The ironclad," (50)
"Raising (their) frightful head;" (51)
"the linen-cloaked dressed in mountain-gear," (52)
"swift of knee," (53)
"finding each other in heroism" (54)
"Those (warriors) like the stars (in the sky)," (55)
"covered the plain" (56)
"Sargon had (barely) ventured into" (57)
"the land of Uta-rapashtim" (58)
"(When) as if he were hostile, the forest waged war against him" (59)
"It set darkness" (60)
"in place of the light of the heavens" (61)
"The sun dimmed" (62)
"the stars sallied forth for[50] the enemy (lines 63-64)
"Securely founded were the strongholds of the enemies, all nine of them, (but every) man, ox, sheep, to[geth]er he cap[tured]. (Lines 65-67)
"On [that day], he [captured] Simurrum (line 68)
"[the trib]ute(??) of Akkade, in his possession (line 69)
"[and] the tribute(??) of Akkade, (from) victories over... (line 70).
"He turned the city into a ruin heap" (line 71)[51]

So, was the battle in the land of Urartu (Uta-napishtim) or Simurrum? Definitely in Noah's land. The warriors are dressed for the mountains (line 52). They mustered on the plain (line 56), and then ventured north (line 57-58), where the forest fought him (line 59). Then the darkness fights him, the sun, and the stars (lines 60-64). They were unable to take the enemy strongholds, and so settled for plundering what they found in the open. The setting abruptly changes in line 68 to the land of Simurrum, as if Sargon gave up on Urartu and settled for taking his vengeance on another land.

According to Peter Huber, the eclipse was in 2353 B.C.[52] See *Figure 19: Sargon's Eclipse*, and the path with the yellow borders. Huber's candidate also contradicts his best choices for Akkadian lunar eclipses which place Sargon's first year in 2327 BC,[53] after the supposed solar eclipse. Therefore, another solar eclipse is proposed to fit this, -2285.04.25. Putting it over the land of Simurrum requires a **ΔT** error of +6500 seconds. Putting it over Urartu requires +4000 seconds. This is not just a discrepancy. It ranks as a contradiction. The long day erases the possibility of either eclipse.

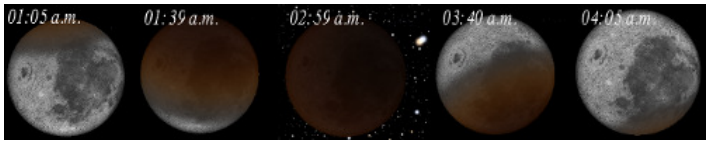
Date	Advocate	Discrepancies
2353 BC	Huber	1 (not best historical choice)
2298 BC	Gregg	0
2286 BC	Huber	1 (+4000 or +6400 **ΔT**)

The solar eclipse of 2298 BC is the correct choice. See Fig-.[54] This is the eclipse path with the black borders going from the top left to the bottom right of the map.

This is undoubtedly the oldest record of any eclipse. It falls in the 33rd year of Sargon of Akkad while he was conducting a military campaign to the north-east in Urartu and then in Simurrum. During the eclipse the stars appeared. These were the planets Jupiter, Venus and Mercury. Our legendary text weighs heavily in favor of the event happening in the land of Uta-rapashtim (land of Noah). The alternatives without Joshua's long day are complete misses.

The EAE Eclipse Observations

Figure 20 *EAE 21.VIII*



First, I must give a word of warning about EAE sources. The source is from cuneiform tablets found in Sumer. They were written by pagan priests who practiced the forbidden art of celestial divination, that is, astrology. To make the record of their divination useful, we have to separate the divination from the astronomical observations and then hope the record connects the observation to a real historical event for which we have some notion of when it happened. Making the connection can be quite tenuous in some cases.

The first lunar eclipse reads, "If an eclipse occurs on the 14th day of Arahsamna [month *VIII*], and it begins in the north[c1] [*top of the moon*], and clears in the south[c2] [*bottom of the moon*], var[iant: ...]; it begins in the middle watch[c3] [*10 pm. to 2 am.*± *0.75h*] and clears in the morning watch[c4] [*2 am. to 6 am.* ± *0.75h*], variant: when it (i.e. the sun) rises. You observe his eclipse and [bear in mind the north.] The prediction is given for the king of the world. Either the king will die, or a large army will fall, or a large army will revolt."[55]

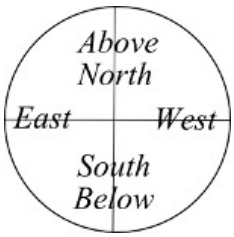
Due to the fact that the prediction line of EAE 21.VIII allows for three possibilities, none of which can be historically pinned down, except perhaps vaguely at the end of the reign of some Akkadian king, the value of the observation is marginal. My purpose, therefore, in charting this eclipse, more so than the others, is not to seek a confirmation of the secular chronology, which I have lined up side by side with the biblical. Rather, it is to show that this text may be easily disposed of in accord with the scraps of information in it without contradicting this chronology.

50 Reiner supplies "for the enemy"; Westenholz "against the enemy." The text could well be ambiguous. But the context suggests that the celestial sign was taken as negative.
51 Joan Westenholtz. See 48 .
52 Huber, Data Analysis: What can be learned from the past 50 years.
53 Akkadica 119-120 (2000), pp. 159-176, "Astronomy and Ancient Chronology," Peter J. Huber, Klosters. He states, "historically, this second alternative may be more attractive." It therefore makes this fact and the other date discrepant. Also, Huber's work "Astronomical Dating of Babylon I and Ur II" contradicts this eclipse choice since the Akkadian Empire cannot be linked with it in a historically responsible way.
54 I calculated this in EmapWin with a **ΔT** offset of –480 seconds, which is well within the standard error ±5075 sec (less than 10% of the allowed error). Then I generated a kml file, which was then corrected for Joshua's long day (-180.03084), which was composited to a relief map. Huber's first eclipse path was done similarly, except with no correction for Joshua's long day, and no correction to **ΔT**. The –480 seconds is not in fact needed. I simply put it in to make the eclipse go through both Urartu and the land of Simurrum. Making no adjustment to **ΔT** results in the eclipse going through Urartu and missing Simurrum, and the eclipse almost certainly took place in Urartu.
55 page 244, "*Aspects of Babylonian Celestial Divination: The Lunar Eclipse Tablets of Enuma Anu Enlil*," Francesca Rochberg-Halton.

The mere mention of an eclipse is sufficient for many people to assume the scholar proposing it has achieved scientific perfection for whatever chronology they associate with it. The miss-dating of Josephus' eclipse associated with the death of Herod is a classic example of misplaced faith in eclipses. Joshua's long day only reinforces that misplaced faith in eclipses calculated by others before 1592 BC. Eclipses for dating purposes often have to be rejected for lack of historical context, or because they are non-unique within the range of dates thought possible by historians. EAE 21.VIII is one of these. I provide the calculation to show that it may be located in this chronology. However, I accord it no value in attesting to any chronology.

"If an eclipse occurs...." I tend to find that citations of these eclipses fail to clearly point out their tentative nature. The EAE series invariably begins with this line. The writer is clearly giving a checklist of how to interpret various kinds of eclipses for the purposes of divination. There remains then the question of which ones really happened. We may suppose that those which really happened are only those united with 'predictions' that really happened in a historically identifiable context. EAE eclipses are often quoted without saying why they should have an attestation value. Most of them do not in my opinion.

Figure 21



The directions used by the scribes are diagrammed on the face of the moon (Figure 21). A shadow that touches first above the east west line is considered a northern beginning. Clearing in the south means that the shadow leaves the south last. The words above and below take precedence over north and south and indicate an opposite convention. Sometimes an eclipse begins on the border line. In that case I check to see if the shadow crosses the north pole of the moon first or the south pole, or if it has last touched the north or south pole when leaving.

I have set this eclipse in the 28th year of Naram-Sin, five years before the end of his reign. We have only two clues here. It is suggested that a king of Akkad will die, and 2223 BC is where we can actually find an eclipse where a king might be expected to die. The historical component cannot stand on its own here. Therefore, the eclipse has no attestation value.

To simulate this in Stellarium 0.12.4 enter –2222.11.27 for the year, and the location of Nippur:[56] 32.07.37, 45.13.51. Set a custom **ΔT** (a= –43200, b=0, c=32, y=1820, l=–26). The eclipse begins at 0:45 local time in the middle watch and darkening in the north. The shadow clears away leaving in the south, ending at 4:19 local time in the morning watch. Figure 20 shows local time, which is 3 hours ahead of Universal Time. The eclipse really did happen. What is doubtful is what the omen claims happened in conjunction with it.

Peter Huber places this eclipse -2185.12.07, at the end of Shar-kali-sharri's reign. It does not agree with "it begins in the north." There is no certainty that it should be placed in the year of a king's death since the prediction line allows for alternatives. The king only needs to be an old king to explain the attempted prediction, but the source does not say it was fulfilled then, so the pagan priests may have considered it fulfilled even if the king died some years later.

Date	Advocate	Discrepancies
–2222.11.27	Gregg	0
–2185.12.07	Huber	1[57] (-c1)

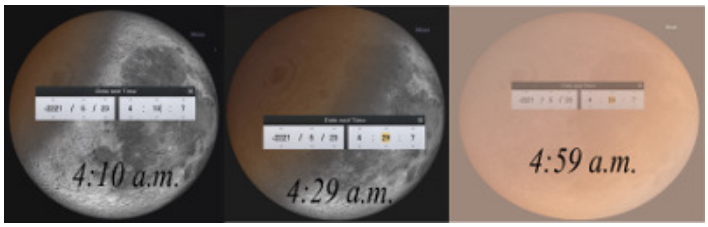
EAE Eclipse 20.I

I place the eclipse of EAE 20.1 toward the end of the reign of Naram-Sin in 2222 BC. The phrase "the son of the king will enter the house of his father" may refer to the old king becoming too feeble to rule, and the son becoming coregent. It fits four years before the end of Naram-Sin's reign. I accord no attestation value to this eclipse. However, the extent of the observations probably make the dating unique.

The text reads, "When an eclipse occurs on the 14th day of Nisannu, and the eclipse becomes dark on the side south above[c1], and clears on the side north below[c2] and sets during the eclipse[c3] and Venus rises[c4], the son of the king will enter the house of his father. The prediction is given for Agade and the king of Agade, his city and his people will be well. The kingdom of Agade will fall into anarchy, but its future will be good. The eclipse began the last watch[c5], and delayed[c6] 1/3 of the watch."[58]

To simulate this in Stellarium 0.12.4 enter –2221.05.23 for the year, and the location of Nippur: 32.07.37, 45.13.51. Set a custom **ΔT** (a=–43200, b=0, c=32, y=1820, l=–26). See Figure 22. The eclipse begins at 3:48 local time, and the moon set, eclipsed, around 5:02 local time. The third watch is 2 am. to 6 am.± *0.75h*. 3:48 am. is 1h 48m of the third watch, which is just under halfway into the watch. Going back to Stellarium, Venus rose almost simultaneously with the start of the eclipse's beginning. The month correlation is II.standard for month I.

Figure 22 EAE 20.I



The scribe is using the opposite convention for north and south as he is looking south and has set the tablet on a table in front of him. Therefore south-above is at the top of his tablet and north-below is at the bottom of his tablet, that is, if we imagine an image of the moon on the table. Therefore, south-above means the eclipse began at the top of the moon and north-below means that it ended at the bottom of the moon. When facing south, the east is at the left hand and the west at the right hand in both conventions. The reference to Venus fits as exactly as we can expect. It is also worth noting that "and clears on the north side below" is not an actual observation. It is an extrapolation or guess that it will clear in such a manner since the moon "set eclipsed." None actually saw it clear. However, we can see that it would have

56 I use Nippur, which is the holy city of Akkad and Sumer, where their scribes probably made the observations. The location of Akkad itself is not known. Sites as far north and west as Tell Brak have been proposed. For lunar eclipses, the exact location is not critical as it is with solar eclipses.

57 It is likely that Huber could have avoided the discrepancy by not restricting his search to the last year of a king.

58 page 179-181, "*The Lunar Eclipse Tablets of Enuma Anu Enlil*," Francesca Rochberg-Halton. I have used both recension A and B to create a harmonization text. I have paraphrased the texts.

cleared as described by moving our longitude far enough west to see the end of the eclipse. The guess was clearly well educated, and I believe they were able to do it. VAT 4956 also tells of a lunar eclipse that the Babylonians could not see. Nevertheless, they correctly predicted its occurrence.

Huber supplies three dates for this eclipse and follows a variant text which says the king will die in the prediction line. Again, this may mean no more than that they expected the king to die. It is doubtful that either king or people held their pagan priests to a standard of perfection in their predictions. Such a privilege is only expected of biblical prophecy. It is amazing that people follow astrologers with poor prediction rates.

Date	Advocate	Discrepancies[59]
-2221.05.23	Gregg	0
-2247.04.10	Huber	3 (-c3, -c4, -c6)
-2210.04.21	Huber	0
-2182.04.12	Huber	2 (-c1, -c4)

Why Huber proposes two other clearly discrepant eclipses I don't know. He may as well toss the observations out.

EAE Eclipse 21.VI

The text reads "If an eclipse occurs on the 14th day of Ululu, and it begins in the north[c1], and clears in the south[c2], *variant:* east; it begins in the evening watch[c3] and clears in the middle watch.[c4] You observe his eclipse and bear in mind the north. The prediction is given for the king of Akkad: Revolt for the king. If the eclipse does not affect the king: Rains in the sky, floods in the source will cease. There will be famine in the land. The people will sell their children for money. If an eclipse occurs on the 15th day:[c5] The son of the king will kill his father and take the throne, variant: the enemy will attack and ravage the land."[60]

I date this one in -2276.10.24 (2277 BC) This would be the 54th year of Sargon, two years before he died. It begins in the north (just) at 21:46 local, in the first watch, and clears in the south at 1:16 local (UT+3h), the middle watch. The month correlation is VII.standard to VI. The date is VI.13. This eclipse might also possibly be placed in -2228.10.04. The historical details are too vague to attest to any history. All I can do is date it and choose the best point.

Huber proposes three candidates. Huber's selling point is that he associates the eclipse with a prediction for the death of the king, and therefore he believes the last year of several kings are sufficient historical context. However, to accomplish this Huber has to combine two separate eclipse omens from EAE 21.VI, and the one predicting a death depends on the eclipse happening on the 15th day of the month. I would classify the nature of his quotation as misleading because it leaves out the object of the first prediction and connects it with the second. His omission overturns his interpretation. His candidate, however, did not occur on the 15th; it occurred on the 14th with no long day correction. Huber's -2210.10.15 candidate also occurs on the 14th (no long day correction), and it does not begin or start in the right places. Huber's last candidate also does not occur on the 15th day of the month and does not end right.

59 Six criterion: 1. south-above, 2. north-below, 3. set eclipsed, 4. delayed 1/3 of third watch, 5. Venus rises, 6. months correlate.

60 page 241-242, "*The Lunar Eclipse Tablets of Enuma Anu Enlil*," Francesca Rochberg-Halton.

Date	Advocate	Discrepancies
-2276.10.24	Gregg	0
-2228.10.04	Gregg	1 (-c2)
-2247.10.04	Huber	2 (-c1, -c5)
-2210.10.15	Huber	3-4 (-c1?, -c2, -c4, -c5)
-2182.10.05	Huber	2 (-c2, -c5)

EAE Eclipse 21.I

This eclipse I date in 2193 BC (-2292.05.01). It is definitely connected to the death of the king of Akkad, even though there is an alternative prediction. The concurrence of the middle chronology dates for the death of Shar-kali-sharri and an eclipse fit, corrected for the long day, give a good level of confidence.

Figure 23 *EAE 21.I*

The text reads, "If an eclipse occurs on the 14th day of Nisannu, and it begins in the south[c1]….; it begins in the evening watch[c2] and clears in the middle watch[c3]...The king of Akkad will die. If the eclipse does not affect the king: There will be destruction and famine. The people will send their children out to the market (to be sold). The great country will go to the small country for food."[61] See Figure 23.

In Stellarium 0.12.4 set the date to −2192.05.01 and set a custom **ΔT** (a=–43200, b=0, c=32, y=1820, l=–26). The eclipse begins in the evening watch @ 22.34 and ends @ 2:16 local time in the middle watch.[62] It begins in the south-east and clears in the south-west. The standard month one correlates to month one here.

The reign of Shar-kali-sharri does indeed come to an end in this year. After he died Akkad was taken over by direct Gutian rule. It is possible that this Gutian experiment in foreign rule failed to pacify the population of Akkad. After a few years, rule was returned to a native ruler, who would be a vassal under the Gutians.

Dated	Advocate	Discrepancies
−2192.05.01	Gregg	0
−2146.05.03	Huber	0

EAE Eclipse 18.XI

An eclipse fitting the description did happen in 2150 BC in the last year of Shu-durul.

The text reads, "If an eclipse occurs in Shabatu in the morning watch[c1], the king of Amurru, *var.* a great king (and) the king of Guti [will experience] bad luck....the land...favorable hearing

61 "*The Lunar Eclipse Tablets of Enuma Anu Enlil*," Francesca Rochberg-Halton. pg. 233-234. Paraphrased.

62 Peter Huber allows a fairly large error range for stated watch times. The record here is close but not perfect. They did not have either accurate clocks or notions of time precision anywhere like the modern world is used to. I allow ± *0.75h* at the watch time boundaries, 10 pm. and 2 am before declaring a discrepancy.

and reconciliation will occur; the harvest of the land will thr[ive]" (XI.III).

[Skipping over omens XI.4, XI.5, XI.6]

If the eclipse occurs on the 15th of Shabatu, the land [...] and famin[e ...]; the king of Akkad will die and the untrue son of the king [will seize the throne(?)]" (XI.7).

Figure 24 *EAE 18.XI*

In Stellarium 0.12.4 set the date to −2149.12.30. The location is again at Nippur. Set the custom **ΔT** as specified above. The eclipse begins at 3:58 local time, and ends almost perfectly when the moon sets at 7:03. The month correlation is to X.standard, and the day to 14. See Figure 24.

Shu-durul reigned 15 years and died in 2150 BC. Whoever took the throne is unknown. The dynasty of Sargon of Akkad ended. While I have dated this eclipse, the historical correlation is too weak to say the eclipse has great attestation value.

Date	Advocate	Discrepancies
−2149.12.30	Gregg	0
-2160.02.09	Huber	0

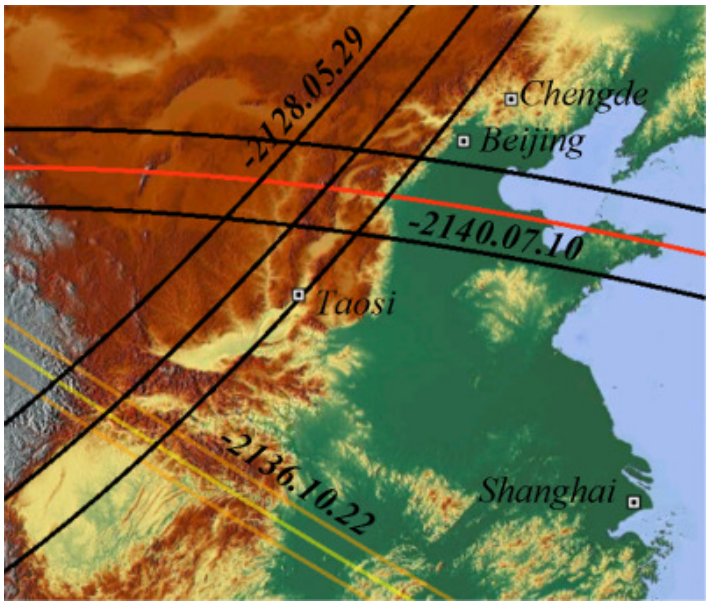
On a scale of 1 to 10, I rank the dating (d) of the observation, and also the historical event supposed to be tied to it (h), i.e. the attestation value.

Date	Source	Astron	History/attest?
2298 BC	*šar tamhāri*	10d	10h/yes
2277 BC	EAE 21.VI	5d	0h/no
2223 BC	EAE 21, VIII	5d	0h/no
2222 BC	EAE 20, I	10d	6h/marginal
2193 BC	EAE 21, I	10d	10h/yes
2150 BC	EAE 18, XI	5d	5h/marginal

While we can be certain about the solar eclipse in the reign of Sargon, the record does not give a regnal year or a year name. Generally, we can say it is unlikely to date to the early part of his reign when he was consolidating Sumer, or the latter part of his reign when he was defending closer to home. Year 33 feels about right. Shifting Sargon's reign earlier squeezes the post Babel period too hard. Putting it later squeezes the Gutian period before UR III too hard. The value of the 2193 BC eclipse is because the historians already worked out that Shar-kali-sharri died in the computed year. The 2150 BC eclipse only has a marginal attestation value. That it has any at all is due to the mention of Gutian involvement and the fact that Shu-durul's ending dates already agree with the middle chronology.

Chinese chronology begins around 2347 BC when someone, allegedly the grandfather of Emperor Yao, observed what stars would be culminating at the two equinoxes and the two solstices. For this purpose one would need a good clock accurate to half a

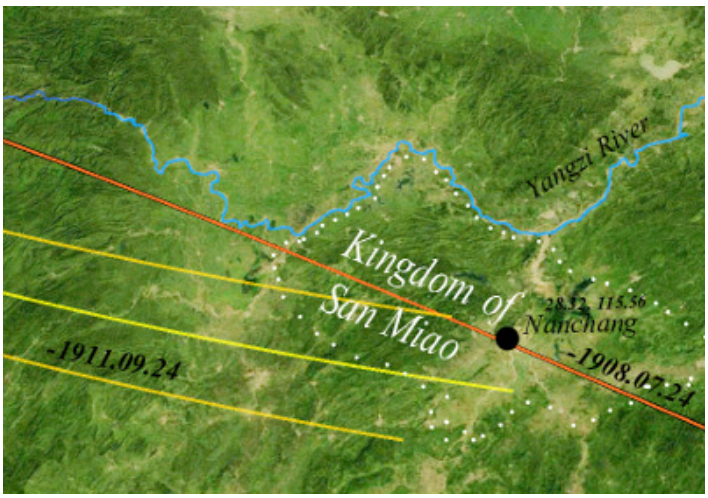
Figure 25 *Hi and Ho*



minute. A well made hour glass or Chinese water clock would do. Or perhaps a clock left over from an antediluvian design handed down from Noah and his sons. After this, one needs a way of sighting the meridian. A good plumb line will allow this. Then one needs to find the days of the solstices and equinoxes. It is these alignments and the subsequent chronology that give the time range for our next eclipse, that of Hi and Ho.

The most famous eclipse in Chinese legend is that of Hi and Ho. They were the drunk astronomers who failed to predict it,

Figure 27 *San Miao Eclipse Map*

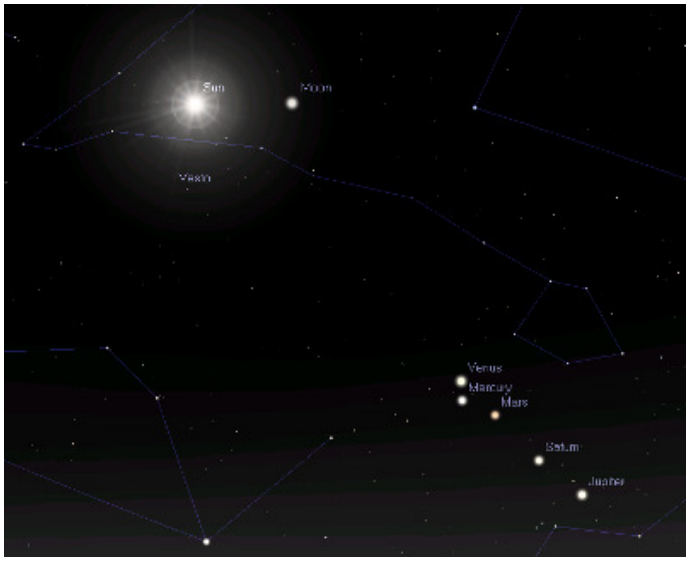


who were executed by the Emperor. Using Joshua's long day, we may come up with a better fit for this legend. The preferred date was 2137 BC. But clearly no suitable eclipse happened in this year, because those who calculate it did not take Joshua's long day into account.

The best candidate for the Hi and Ho eclipse would have taken place on July 10, 2141 BC. See Figure 25. It passed near Beijing at noon. The only complaint that some might have about this eclipse is that it appears to be in the summer and not in the fall, as the legend says. This issue may be resolved by supposing that the Chinese calendar began in January at the time. Z.A. Simon points out that the Chinese anticipated spring by observing it as soon as the winter solstice passed. It does seem that Yao's cardinal stars can only be properly observed based upon this assumption. Though I am not so certain about Simon's exact calculation of Yao's Canon, as it appears that he did not choose an absolute midnight, but a midnight that was not adjusted for the equation of time, causing about a 15 minute error. Also, failure to account for Joshua's long day here will result in an error of 2 minutes, i.e. 1/2 of a sidereal day. I am also not certain about the original observation being made in four cities. It is still possible that they were made from one location. However, none of these reservations seriously upset the time frame for the Hi and Ho solar eclipse.

The locations are from Z.A. Simon as four possible observation points for Yao's four cardinal stars. The yellow track at the

Figure-26 *1953 BC Yingshai Line Up*



bottom is what is usually proposed. It is calculated without Joshua's long day, and so it never happened. Also, it is almost certainly too far south. The eclipse with the red center line for -2140.07.10 was total, passing right through the heart of Xia, China. This is the most probable eclipse, though I believe the legends may confuse the -2128.05.29 eclipse, also. A small **ΔT** offset +1 degree (240 sec) will put this eclipse over Beijing and Chengde.

THE SAN MIAO ECLIPSE

Another famous eclipse also has to be corrected for Joshua's long day. And I do believe it comes out better than the alternative:

> "Philosopher Mozi (*ca*.468-382 BC) wrote: 'In ancient times, the *san* (three) Miao tribes were in disarray. Heaven ordered their destruction. The sun rose in the evening...King Yu, founder of Xia, first dynasty, vanquished them...' The *Bamboo Annals* adds: 'When the *san* Miao perished . . . the Sun disappeared by day and reappeared at night . . .'"[63]

63 "The need for more accurate 4000-year ephemerides, based on lunar and spacecraft ranging, ancient eclipse and planetary

Yu's reign is solidly linked to a planetary alignment: "Liu Xiang's (77-9 BC) *Hong Fan Zhuan*, e.g. states that 'the original Zhuanxu calendar began ... when the Sun, Moon and five planets met in Yingshai, 5°" (*ibid*). Pang and Yau matched this alignment for Feb. 26, 1953 BC and March 5th. On the 26th the planets Saturn, Mars, Venus, Mercury, and Jupiter were all less then 5° apart. Four of the planets were only 1° apart. On March 5th the moon joined the line up, all within the Chinese constellation Yingshai: Figure-26 shows -1952.03.05 at 5:40 UT.

From this, the historians compute that Yu's official reign was 1914-1907 BC (*ibid*). So we look for our solar eclipse between those dates. The location given by Pang and Yau is 28 N, 115 E, but I found a map of the kingdom of Miao. The eclipse is the red line passing through Nanchang on -1908.07.24 (Figure 27).

The boundary of the kingdom is marked with the white dots. The coordinates are 28.32 N, 115.56 W. Totality lasted for about 30 seconds. The magnitude was 0.999 at 14:22:20 LMT. The eclipse without Joshua's long day is plotted as the yellow lines. I viewed that proposed eclipse several times in Stellarium, and can say that it was so near sunset that it would be invisible. The -1911.09.24 eclipse was also annular (mag. 0.980). If dimming had been noticed by anyone, they might have mistaken it for haze or clouds of the horizon. Kevin Pang regards the record as indicating a sunset eclipse, however, this is an interpretation and not what the text says. We see above, that the eclipse was about 2 pm., which according to many notions of time, is *evening*. Certainly according to the ancient biblical definition. The sun appears to set in the middle of the sky and rise again during every total eclipse. To be sure, there was no standard technical language at this date for describing a sunset or sunrise eclipse differently than one at midday, other than plainly stating the time of day, which the record does not do.

The amazing thing is that when the long day is factored in, this eclipse hits the heart of the San Miao Kingdom with laser beam precision within exactly the range of years indicated by the planetary alignment.

---

data" Kevin D Pang, Kevin K. Yau, International Astronomical Union, NASA Astrophysics Data System, page. 113-116.

When we come to Genesis 14 the Scripture tells of the battle of Siddim between the five kings of the Jordan plain and the four kings from the north. One of these was Amraphel, king of Shinar. He and his allies took Abraham's nephew Lot captive. To rescue Lot, Abraham mounted an expedition at night with his 318 men and his other allies. The northerners were surprised and had to abandon all of their loot and flee back to the north. This war has often been held by critics to be fictional, however, everything we know about the times fits with the biblical narrative. Now, I have some major developments to add to what we know about this, after applying what we know from the battle of Gibeon.

There have been difficulties with Genesis 14, especially the names, but as it turns out, what makes it difficult is our ignorance of certain realities of language and history. Other difficulties are simply made up by the critics. Names in one language are difficult to identify in another language when translations or variant terms are employed, and this results in confusion, causing scholars to identify several different persons as possible candidates for the bearer of the name. The trouble begins when scholars don't tell you the slim basis for their proposals. Lack of full disclosure transforms theory into fact too quickly. After being so obscured, a speculative hypothesis turns into a belief that is just a little bit too dogmatic. Consider for a bit the name "Merodach-Baladan." We know that this king was the contemporary king of Babylon to Hezekiah. But the cuneiform name is transcribed: ^{D}MES.A.-SUM-na, and commonly spelled out as Marduk-apla-iddina II due to variant renderings of the glyphs unique to each language. The connections can be somewhat mystifying. It is therefore better to identify someone by time and place than by just a translation of their name, and then after the first two points are determined, if there is a similarity in the names in two sources, then a proposed identification can be made. A good general article on the difficulties encountered can be obtained by searching for "cuneiform derived scripts."

Early on, scholars thought that Hammurabi was Amraphel, and arguments were presented based on the similarity and transcription of names. But then it was discovered that Hammurabi lived at the wrong time. I thought so at one time myself, but have learned since to read newer research before concluding, and then to make sure that time and place are correct before suggesting an identification. You can't just trust other scholars, you have to check on how they came to their conclusions.

With this said, we can only explore what is probable.

The difference between *Amar* and *Amr* is simply a matter of replacing the vowels of the Hebrew text, which is not difficult, since the Masoretes had no clue who this king was in any other language, except Hebrew. The reality is that any king's name fitting the pattern '-*x*-M-*x*-R-*x*, where *x* is any vowel, is possible in Sumerian. The ending "phel" is similar to the "Pal" we find on the end of the names of many Assyrian kings, but this is no proof that "phel" is the equivalent. The Hebrew represents anything fitting *x*+P+*x*+L+*x*. Further, in foreign translations, the PH or P and B interchanged. At the end, the number of possibilities is so great as to preclude certain identification without a historical context and solid chronologies to go with it. A proposed identification is not enough. The person has to fight the same battles in the two sources, live in the same place, and live at the same time. Also difficult is the fact that reading and interpreting the various forms of cuneiform, which were used to translate many languages, is like reading tea leaves. It is traditional for scholars to review everyone else's reading of the leaves (wedges, in this case), usually with criticisms, before making their own at the end, which is not much more certain than those who are being reviewed.

I will spare the reader a review of all the proposals, and get straight to the point and its foundations, because the paradigm used heretofore has not included Joshua's long day, and therefore the time context by which the identification can be made is incorrect. A new proposal is called for that takes the effect of Joshua's long day seriously.

The reign or co-regency of Amar-Sin with Shulgi of the third dynasty of Ur, was contemporary with the battle of Siddim, because the absolute biblical chronology lines up with astronomical dating of the reign of Amar-Sin, using the clock time correction necessary for Joshua's long day. Now, the reign of Amar-Sin is based on a complete king list from Ur-Nammu to Ibbi-Sin, which archaeological discoveries have recovered (*The Sumerian King List*). Without astronomical dating, this king list chronology is floating. This floating middle chronology, favored by historians who are not mislead by astronomical miscalculation, has to be adjusted by about four years. There are five eclipses, four lunar and one solar, by which we can do this.

The eclipses are named as follows:

2120 BC The defeat of the Gutians by Utu-hegal.
2113 BC The overthrow of Utu-hegal by Ur-Nammu.
2089 BC Hymns of Shulgi Lunar eclipse
2089 BC Hymns of Shulgi Solar eclipse
2048 BC The death of Shulgi
2005 BC The end of Ur III.

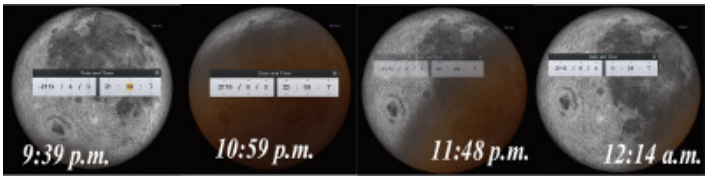
The sources are as follows, as tagged by Peter J. Huber:

2120 EAE tablet 21, month IV
2113 EAE tablet 20, month IV
2089 Shulgi Hymns D
2048 EAE tablet 20, Month III
2005 EAE tablet 21, Month XII

EAE Eclipse 21.IV

First, we have the eclipse which the Sumerians interpreted as presaging the defeat of the Gutian king Tirigan by Utu-hegal, which took place during the campaign of Utu-hegal at the first of his seven years of reign over Sumer. This eclipse of the Gutium is found in EAE tablet 21: "If an eclipse happens on the 14th day of Du'uzu, and it begins in the west[c1] and clears in the south[c2] [*var.*: north]; it begins in the evening watch[c3] and clears in the middle watch.[c4] You observe his eclipse and bear in mind the

Figure 28 *EAE 21.IV*



west. The prediction is given for the king of Guti, there will be a downfall of Guti in battle. The land will be totally laid waste."

Jacobsen comments, "That this omen has reference to Utu-hegal's famous victory over the Gutians, which freed a country bare and destitute after years of Gutian misrule, seems obvious.

That, more important, the late text in which the observations are contained actually rests on a sound historical basis is indicated by the inscription of Utu-hegal himself. According to Utu-hegal's account of the campaign, he camped the night before the battle near Muru. As he prayed to other city gods on his route, so he prayed to Ishkur also. But the account does not, as usual, stop there; a passage, unfortunately broken, goes on: 'In the midst of the night....' Something of importance must thus have occurred in the night just before the decisive battle. What it was can hardly be doubtful; it must have been the lunar eclipse foreboding victory over the king of Gutium. The moon-god Sin, the special god of the Gutians, became darkened in token of their imminent defeat."[64]

The month of Du'uzu corresponds to month IV of the Babylonian calendar (or Tammuz of the Rabbinic calendar), which gives us a day range to search in from the spring equinox: 30*4±60 days. An eclipse outside of those limits does not match the record, and we would prefer the match to be 30*4±30 days after the spring equinox. In other words, the months can be out of synchronization with the equinox by two months.

The night was divided into three watches of four hours each. The first watch (evening watch) was 6 pm. to 10 pm. The second watch (or middle watch) was 10 pm. to 2 am. and the morning watch (or last watch) was 2 am. to 6 am. The eclipse has to begin between 6 and 10 pm. and end between 10 pm. and 2 am. I allow errors in timing up to ±0.75[h].

The scribes making the observations in those days had two conventions for directions. For the usual method, picture the scribe facing south toward the moon and holding the tablet up over his head. North is behind him over his head. East is at his left hand, and west is at his right hand. The bottom of the moon therefore is south. The top is north. The left hand edge is east, and the right hand edge is west. Some scribes used an opposite convention. They faced south and put the tablet on a table in front of them. Imagine a picture of the moon on the tablet. This time north was at the bottom of the picture and south at the top. East was at the left and west at the right. These two methods were bound to cause confusion between different scribes and schools. (A good analogy might be the two modern conventions of measuring azimuth. One method measures from north going clockwise. Another method measures from south going clockwise.) The scribes sometimes tried to indicate the method used with an extra word. Therefore "south above" and "north below" refer to the second convention, whereas simply "north" and "south" refer to the first.

All of this is very important for the circumstances of the eclipse. In this case the eclipse is said to begin in the "west." It is supposed by Peter Huber and others that an eclipse cannot begin in the west. This one didn't, to be sure, (it simply came close to beginning in the west) but it is possible, e.g. the eclipse of −2088.03.23 described below. Note that a negative sign in front of a date instead of "BC" indicates an astronomical dating convention using a 0 year. In the above case, the year is 2089 BC.

Rather than explain "west" as a scribal error in EAE tablet 21, I suggest that bad weather obscured the beginning of the eclipse, and that the scribes assumed it had begun in the west.

The matching eclipse in month IV is found in the first or accession year of Utu-hegal:

2120 BC June 3 Lunar Eclipse @ 92.72%[65]

See Figure 28. The circumstances are in the footnote, and all the necessary data to calculate the eclipse. See the charts for the historical context. This eclipse is of marginal value by itself, however, when combined with a subsequent eclipse at the end of Utu-hegal's seven year reign and the start of Ur-Nammu, its usefulness is magnified. The inscriptional evidence to corroborate EAE given by Jacobsen also reinforces the circumstances.

Date	Advocate	Discrepancies
-2159.07.24	Huber	2 (-c1,)
−2119.06.03	Gregg	1 (-c1)

Huber's discrepancy is occasioned by being compelled to use an eclipse at the end of Utu-hegal's reign, rather that at the start as indicated by the Sumerian King List. To achieve this, he has to introduce a discrepant interpretation of the SKL. His eclipse is actually in the first year of Ur-Nammu, so he has two discrepancies. Only by arbitrary rearrangement of the SKL can Huber call this a match. Additionally, Huber's dates are 40 years too high for the middle chronology favored by historians.

EAE Eclipse 20.IV

"If an eclipse occurs on the 14th day of Du'ūzu, and the moon in its eclipse becomes dark on the side east above[c1], and clears on the side south below.[c2] .....The eclipse equalizes the first watch[c3] During totality the stars above come out[c5]..... In Du'ūzu (the eclipse occurs) not at its calculated time[c4] (i.e. prematurely?). ..... The king who ruled will die. The fortresses will fall. ..... The prediction is given for Ur. ..... The grandson, descendant of the king (or: of a king), will seize the throne. ..... The king together with his clan will be killed."[66] A matching eclipse is found in:

2113 BC 1 Ur-Nammu July 15 LE 100%[67]

This eclipse fits the bill exactly. Firstly, month IV correlates with the standard month IV.[68] The eclipse equalizes the first

64 *The Sumerian King List*, Thorkild Jacobsen, 1939, pg. 203.

65 The eclipse is observed in Stellarium 0.12.4 with the following values: date −2119.06.03. Time start @ 21:29 local and simulate to 0:33 local. Use custom **ΔT** values a = −43200 (the long day correction), b=0, c=32, y=1820, l=−26.00. Set location to Nippur: 32.07.37, 45.13.51. The tablet date is month IV and the 14th day. In the standard calendar this is month II and the 13th day. Peter Huber says to allow ±2 months for intercalation variations, but I consider more than ±1 a discrepancy. Also, eclipses were customarily dated the 14th even if they happened a day earlier. Text extracts: "A decision will be given the king of the Gutians; downfall of the Gutians by weapons will take place" and "in the midst of the night...." "14th of ^{itu}sh-numun" [?], "from the first watch to the middle watch."

66 page 194, "*The Lunar Eclipse Tablets of Enuma Anu Enlil*," Francesca Rochberg-Halton; paraphrase including the important details.

67 In Stellarium 0.12.4 set date to −2112.07.15 and time to 0:11 local time (UT+3 hrs) and simulate to 3:46 (UT+3 hrs). Set the custom **ΔT**; a = −43200 (long day correction), b=0, c=32, y=1820, l=−26.00. Set location to Nippur: 32.07.37 *lat*, 45.13.51 *long*.

68 I define the standard calendar as the biblical calendar. The first month is intercalated such that the top of the sun passes to the north ≥ 270° degrees before sunset on the 15th day of the month. Intercalations were haphazard and irregular at times. Peter Huber allows for the months to be two months out of phase,

watch, which I take to be a remark on the duration of the eclipse. It lasted 3 hours 34 minutes. The duration of the night on this date is about 10 hours, and a watch time is 3 hours 20 minutes. So the eclipse does equalize the first watch. The eclipse also occurs before its canonical time (the 14th), since it falls early on the 12th day of the month. See Figure 29.

One cannot really ask this eclipse to fit the situation any better. It falls seven years after the first eclipse attending the defeat

Figure 29 *EAE 20.IV*

of Tirigan. Utu-hegal ruled for seven years, six months, and fifteen days, according to the Sumerian King List, and then was overthrown by his son-in-law, Ur-Nammu, the king of Ur. The eclipse begins in the north-east, "east-above," and ends in south-west, "south-below." ("Above" and "below" indicate that an opposite convention is being used.)

Huber's candidate is -2149.07.04. It does not begin east above (1). It does not end south below (2). It does not equalize the first watch in duration, but I'm not counting this as a discrepancy. Huber's date lands in the middle of Ur-Nammu's reign in his putative chronology (3), so while avoiding a fatal blow with the former eclipse, he surely has one here.

Date	Advocate	Discrepancies
-2149.07.04	Huber	3 (-c1, -c2, not 1st Ur-Nammu)
−2112.07.15	Gregg	0

Criteria c5, "The stars above come out." I suggest that the fainter stars were technically termed stars *above*, i.e. farther away in the estimation of the scribes. These stars are invisible during a full moon, except when a total eclipse occurs they appear.

The first eclipse −2119.06.03 and the second eclipse −2112.07.15 are seven years apart. Both took place in month IV according to the omens. Utu-hegal ruled a bit longer, showing that the second eclipse had time to presage his betrayal by Ur-Nammu. The seven regnal years to Utu-hegal are standard years, but the six months are part of Ur-Nammu's first year, showing that the assassin's first year was also only six months long. These circumstances lock down the reign of Utu-hegal and the end of the Gutian era with Tirigan, and the beginning of Ur III, with a fairly high level of confidence, and with complete agreement to the middle chronology.

---

which can indeed happen simply by missing two intercalations, and there is historical evidence that this happens. Often kings would make up for several missed intercalations by intercalating every year with an extra month until the out of phase condition was corrected.

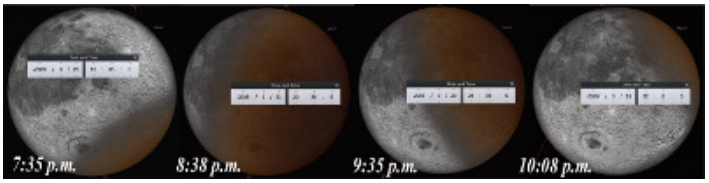
THE SHULGI BALLAD DOUBLE ECLIPSE

The next eclipses are in the reign of Shulgi. In the year 2089 there was a rare double eclipse, which is a lunar eclipse followed half a month later by a solar eclipse (SE). The solar eclipse was 100% at Nippur. Lunar eclipses do not have to be 100% to be acceptable, as they are visible even when they are not 100%. Solar eclipses have to be better than 90% just to get noticed.

First the lunar eclipse:

March 23, 2089 BC, Year 7 Shulgi; 89.7%[69]

Figure 30 Lunar Component of Shulgi Double Eclipse



Date	Advocate	Discrepancies
-2137.05.24	-------[70]	1
2089	Gregg	0

The discrepancy with the 2138 BC lunar eclipse is that it does not occur before the solar eclipse. Now let's look at the solar eclipse.

2089 BC 7 Shulgi April 8, SE 100%[71]

The relevant text is based on Jacob Klein's translation:

"247 Nanna has [darkened?] in the heights of (its) heaven,
248 Utu [has eclipsed?] on (its) horizon,
249 Inanna, the Lady of Battle, frowned upon it"[72]

Klein's commentary: "247-248: For the restoration of the verbs in these lines cf. the following parallel in IV R 28, No. 2, 23 ff.: "The sun darkens on the horizon. The moon becomes extinguished in the heights of heaven" (pg. 109-110).

Nanna is the Sumerian moon-god. Utu is the Sumerian sun-god, and Inanna is the same as Venus. The text, therefore, is to be interpreted as follows (disposing of the idolatry to extract the observations):

1. The moon has extinguished in the heights of its heaven.
2. The sun darkens on the horizon.
3. Venus...frowned upon it.

We have a lunar eclipse, followed by a solar eclipse, in which Venus is present overlooking (just 27º away). The lunar eclipse is not on the horizon and the solar eclipse is on the horizon. "The heights of heaven" need not mean the moon was at zenith. It only needs to mean high enough to be "up there."

Figure 31 Solar Component of Shulgi Double Eclipse

Figure 31 is a screen shot from Stellarium. All these stars would not be visible. I have brightened them for artistic effect.

Supposedly, the double lunar and solar eclipse is dated to 23 years after the accession of Shulgi, by Jacob Klein, *Three Shulgi hymns (1981)* on May 24, 2138, and May 9, 2138; however, Klein's book contains no astronomical calculations. The reality is that Klein did not commit dogmatically to the 23rd year. He only suggested it, and that is because the hymn speaks of great military victories, which he believes were not won early in Shulgi's reign. A footnote on page 59 is informative:

"It is most unlikely that the hymn would refer to a war

---

69 To view this eclipse in Stellarium set the date to **−2088.03.23** and the start time for 19:13 local (UT+3) and simulate to 22:33 local time (UT+3). Use custom **ΔT** values a = −43200 (long day correction), b=0, c=32, y=1820, l=−26.00. Set location to Nippur: 32.07.37 *lat*, 45.13.51 *long*. This eclipse occurred at the full moon and was followed by a solar eclipse at the next astronomical new moon. See Figure 30.

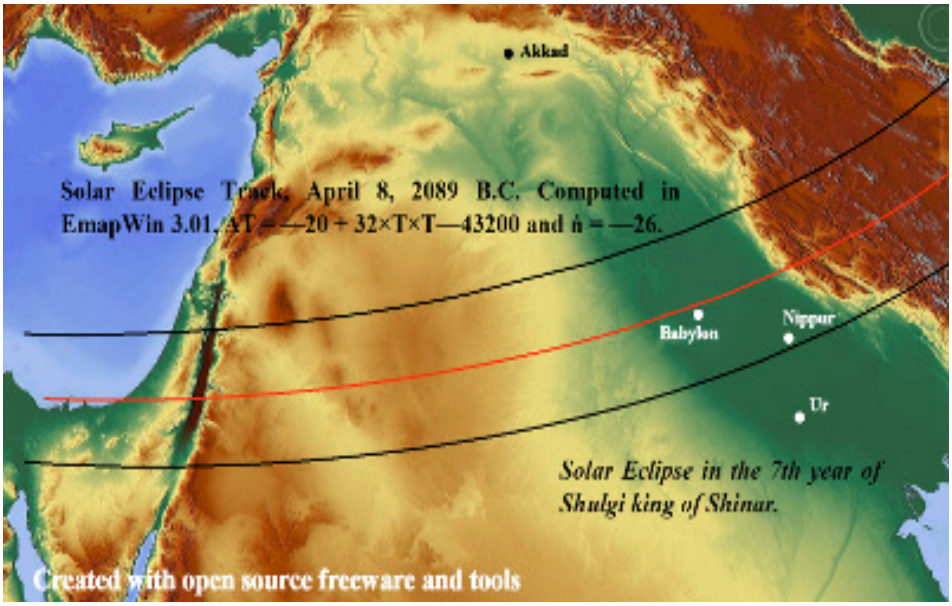
70 This is blank because I can't track them down; this is the only choice for a double eclipse here. I believe no names are put to this eclipse because it is an embarrassing failure! However, it counts against any chronology that can't explain it.

71 I calculated this eclipse for Nippur, the Sumerian religious capital: 32.07.37, 45.13.51. To view this in EmapWin 3.01, first one must set a custom location by subtracting 180.03084° from the longitude of Nipper to correct for the long day, "Display(D)" with "Local" bulleted. Then pick "Set Long" and enter **−134.77, 32.13.** Next set the date to **−2088**. Then click back and forth until the date April 7 appears for this eclipse with the search arrows. The date will appear one day off because we have transposed an eclipse calculated with uniformitarian assumptions across the international date line to simulate Joshua's long day. EmapWin shows a magnitude of 1.006 at Nippur, which is total. EmapWin limits any **ΔT** correction to 10,000 seconds, which is why the correction for the long day has to be performed using a longitude shift. 1° = 4 min. 180° = 720 min = 43200 sec. I also calculated the eclipse in Stellarium 0.12.4 with **$\Delta T = 32\times T^2-43200$** and $\dot{n}$ = **−26**; totality occurred at 7:05 local time (UT+3). The altitude was 13°33'. Also calculated with **$\Delta T = 30.6\times T^2-43200$** and $\dot{n}$ = **−23.8946** in Stellarium 0.12.4. Total at 6:47 local alt 9°52'. **T**=(Y-1820)/100.

72 *Three Shulgi Hymns*, Jacob Klein, pg. 81.

waged by Shulgi prior to his accession, while still a crown prince. From the beginning of the hymn he is referred to as a king, acting independently, on his own initiative. The possibility of dating the events recounted in our hymn, to the second year of Shulgi, when according to E. Sollberger, he was recoronated in Nippur, cannot be ignored. See also the weighty arguments re-

Figure 32 Track of Shulgi Solar Eclipse



cently put forward by C. Wilcke, in support of the above theory. However, the above hypothesis is based on the restoration of a broken date formula (contrast Kraus,..., where the same formula is assigned to Shulgi's sixth year)."

There is therefore no certainty as to which year in Shulgi's reign the hymn should be dated, aside from finding out when the eclipses actually happened by calculation within the boundaries

Figure 33 Global View Shulgi Eclipse

of his reign. I have examined the year name lists and find no reason why the eclipse cannot have happened in his 7th year, nor is there any reason why he could not have won great victories in his 6th and early in the 7th . The year name for the 7th year reads, "Year: The king made a round trip between Ur and Nippur (in one day) ." But without a list of year names in consecutive order, there is no proof that the year names have not been shuffled a bit. They were not in the habit of using regnal years at that time. Even at that, reordering is not necessarily needed. It is not canon law that a year name has to refer to a great victory won the year before.

The solar eclipse, attributed to Klein's interpretation of the Shulgi Hymns, happened before the lunar eclipse. But the hymns have the order reversed. "Z.A. Simon adds that the lunar eclipse is mentioned first in the poem," (http: //en. wikipedia. org /wiki/ User: Oswax/CANE) and then offers an assumption for why it does not fit the astronomy for the 2138 proposal. And, really, I see it as an excuse. Simon is giving us an assumption as to why it does not fit, and not real information. The 2089 double eclipses do not have this problem. The lunar eclipse comes first, and then the solar eclipse. Also, the 2138 BC annular eclipse requires a large **ΔT** offset just to be visible in Mesopotamia, and even with the offset, the fact that it is annular makes it much less noticeable than the real eclipse, which was total.

Now I introduce line 149 of the poem: "Venus frowned upon it." Not only was the 2138 BC eclipse not visible; the planet Venus was not visible at the time of the eclipse, either. Once we correct for Joshua's long day, we find that the eclipse is visible just after sunrise, along with the lunar eclipse at the previous full moon, and in the correct order. The lunar eclipse comes first, and then the solar eclipse. Without the long day, they have it backward. Finally, Venus appears during the 2089 eclipse right above the sun and moon "frowning" down upon it. It is not hard to pick out Venus in the Stellarium simulation.

EmapWin Version 3.01 (released Sept. 30, 2013 by Shinobu Takesako), uses Besselian Elementes, and differs from NASA's values by only a few seconds. This is overkill, considering the estimated error in **ΔT**. I simulated Joshua's long day by shifting the longitude 180° to -133.8936111° (and Lat. 30.7944°). A total eclipse occurred at Nippur.[73] I plotted this one on a relief map. It passed through the city of Nippur and Babylon just after dawn. See Figure 32 and Figure 33.

The secular acceleration directly affects the latitude of the moon as it moves from one side to the other of the ecliptic. For a change in the secular acceleration from **−26 to −24** there is a corresponding change in the lunar longitude of about 30 arc minutes, which can be compensated for by adjusting the **ΔT** argument. However, a change of about 3 arc minutes also occurs in the lunar declination. There is no way to correct from one value of secular acceleration to another in this regard. EmapWin uses the latest values based on lunar range finding experiments (**−25.9 ± 0.02"**).

Date	Advocate	Discrepancies
-2137.05.09	--------[74]	3
2089 BC	Gregg	0

73 Emapwin uses **ΔT** = -20+32 x ((year-1820)/100)^2 year < -800 and DE406/422 -26"/cy2 tidal value (F.R. Stephenson, 2004-5). The sigma error for this date is ±4113 sec (Peter J. Huber's formula).

74 I believe the advocates are too embarrassed to own this eclipse.

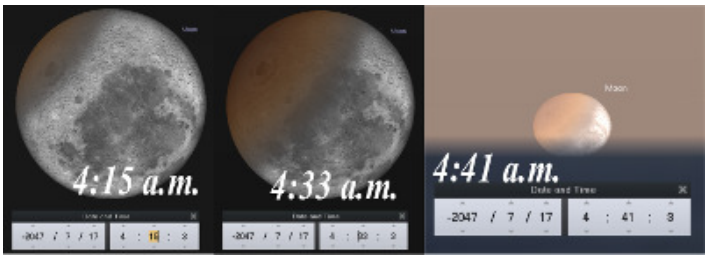
The discrepancies for the unknown advocate are: 1. The eclipse was annular, too close to sunrise, and therefore unlikely to be noticed. 2. It requires a large delta T -2500 to be visible. 3. Venus appears nowhere during the eclipse.

EAE Eclipse 20.III

In the last year of Shulgi is the "patricide eclipse," which is a lunar eclipse (Figure 34). It reads, in part, as follows, "If an eclipse occurs on the 14th day of Simanu, and the moon in its eclipse becomes dark on the side east above[c1], and clears on the side west below[c2] and passes the first watch[c3] and touches[c4] the middle watch.'[75]…The omen is given for Ur and its king. The king of Ur will experience famine. There will be much pestilence; The king of Ur, his son will wrong him, and the son who wronged his father, Shamash will catch him.[c5] He will die in the mourning place of his father. The son of the king who was not named for the kingship will seize the throne" (*EAE tablet 20*).[76]

The watch times of this eclipse appear to be confused, either in observation, or transmission to the present. The variants and uncertain language in this section of the text show the confusion.[77] However, the unclear terms seem to indicate a first watch to middle watch eclipse, and so the record is discrepant with our match. Huber's July 25, 2095 match lacks the timing discrepancy, but this is offset by a two month discrepancy in his month correlation (1); another discrepancy is that his eclipse does not begin "east above" (it begins east below) (2). Yet another discrepancy is that Huber's candidate does not end "west below." It ends west above (3). And the sun does not catch the eclipse (4). Gurzadyan's candidate: (June 27, 1954 BC), has no entry angle

Figure 34 Patricide Eclipse



that can be extrapolated from the exit angle; it can be checked by moving the longitude east and continuing to observe (1); his candidate is discrepant with the ending watch (2); the exit angle is wrong: west above (3), and the sun does not catch the eclipse (4). For myself, the watch time is incorrect (1), the entry angle is correct; the exit angle was unobserved but may be correctly extrapolated by moving the longitude west and continuing to observe. The sun does rise with the eclipse, "Shamash will catch him." The entry and exit, "east above" and "west below" and "Shamash will catch him" are all indicative of a late third watch eclipse. A wrong exit or entry angle should perhaps be given double weight. Watch times are more easily confused and should be given single weight.

75 or 'equalizes the first watch' (variant recension B).

76 page 189, "*The Lunar Eclipse Tablets of Enuma Anu Enlil*," Francesca Rochberg-Halton. Paraphrase.

77 Gurzadyan offers the translation, "the evening watch passes and the middle watch is touched" (EAE 20IIIA), which may be regarded as times when the moon was clear, i.e. times that exclude the eclipse. This gives us a way of removing the discrepancy that results from the morning watch time of the eclipse.

Date	Advocate	No. of Discrepancies	
-2095.07.25	Huber	4	(-c1, -c2, -c3, -c5)
−2047.07.17	Gregg	1	(-c4).
-1953.06.27	Gurzadyan	5	(-c1, -c2, -c3, -c4, -c5)

It does look like the eclipse will clear on the west below, but our scribe was extrapolating here (or some other error in observation or transmission occurred) since he did not see it. It does end west below if one travels west to watch it. "Shamash [the sun] will catch him" might be related to the sun rising simultaneously with moonset at 4:41 am. Discarding the confused text on the watch times results in the fewest discrepancies.

Gurzadyan adds one additional criteria, namely, that "the lunar eclipse must end at the time when the weakly shining stars become visible".[78] "Become visible" may be an imposed interpretation of something closer to, "the time when stars appear (or disappear)" for which there are two times, evening twilight and morning twilight. If this is the case, then in 2048 the eclipse set just 15 minutes after mag. 5 star extinction. Gurzadyan's candidate does not truly end the eclipse with the time for stars appearing; they appear about 1.25 hours before it ends. Neither does Huber's; mag. 5 stars would be visible for the entire duration of his eclipse. Gurzadyan's citation of this detail is still a discrepancy for his candidate; 1.25 hours is too far away from the ending. In the actual case, 2048 BC, it could be said that the entire eclipse happened in the time frame for star extinction. In 2095 and 1954 BC, they appeared for most of the eclipse and were definitely present during the last half. The number of discrepancies depends on various interpretations, but I would say as long as equal criteria are applied, that 2048 comes out on top. There is no such thing as eliminating all discrepancies with data sources this ancient.

The month of Simanu (III) correlates to month IV.14 on the standard biblical calendar.

July 17, 2048 BC; lunar Eclipse; year 48 Shulgi,[79]

Ur-Nammu "died in battle, as we learn from a hymn telling of the despair that followed his death" (Babylonians, H.W. F. Saggs, pg. 85). Ibbi-Sin's rule of Ur ended in defeat, and he was taken prisoner to Elam. "The Babylonian Weidner Chronicle records the following: 'Amar-Sin... changed the offerings of large oxen and sheep of the Akitu festival in Esagila. It was foretold that he would die from goring by an ox, but he died from the 'bite' of his shoe." (wikipedia.org /wiki /Amar-Sin). Shu-Sin "succeeded his brother Amar-Sin" (/wiki /Shu-Sin). So we can

78 His cited source is "V.Donbaz and J.Koch 1995, Ein Astrolab der dritten Generation, Nv. 10, JSC, 47, 71." However, I cannot find this in Rochberg-Halton for EAE 20.III. Rather, I find it in EAE 20.IV; I noticed this after writing the following paragraph, which I will leave as is. I was right to suspect misinterpretation. The phrase on RH reads "In his *shurinnu* the stars above came out" (pg. 193). See my comments on 20.IV above. It appears that Gurzadyan's source skipped a page in claiming this detail applied to 20.III.

79 Location Nippur: 32.07.37 *lat*, 45.13.51 *long*. Astronomical date: **−2047.07.17**. First contact: 3:57 local at 7°24' altitude. Set eclipsed at 4:42 local time. In Stellarium 0.12.4 with $\Delta T = 32\times T^2 - 43200$ (a=−43200, b=0, c=32, y=1820, l=−26) and $\dot{n} = -26$ simulate from 1:02 UT @ to 1:45 UT. The moon set while eclipsed. It started at 7° and ended at −1°. See Figure 34.

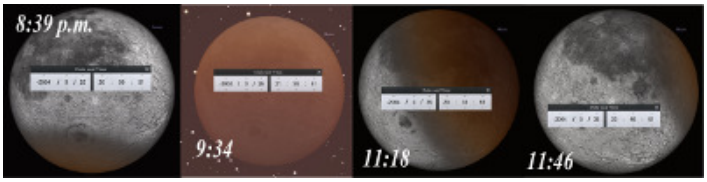
rule patricide out of the Amar-Sin to Shu-Sin transition. We can also rule out patricide in the Ur-Nammu to Shulgi succession. We can rule out 2030-2029 BC when Ibbi-Sin succeeded Shu-Sin, as there is no suitable eclipse. This leaves us with the above solution. If we assume that Amar-Sin was not named for the throne, then he would not have been coregent during the battle of Siddim. However, the eclipse happened in year 48 of Shulgi in month III. If the murder took place at the eclipse while Amar-Sin was in Canaan, taking charge of his father's military contingent, he would have become the legitimate successor before the battle of Siddim, instead of just being a prince. Upon returning to Shinar he seized the throne from the murderer.

The events of Genesis 15 fit into late 2048 BC, and those of Genesis 16 are dated from the spring of 2047 BC and forward. This would allow Genesis 14 to fit into early 2047 BC right in the accession year of Amar-Sin, with enough time for him to actually be the legitimate king.

EAE Eclipse 21.XII

And in the last year of Ibbi-Sin is the eclipse that the Sumerians supposed presaged the downfall of Ur (Figure 35). The text EAE Tablet 21, Month XII reads, "If an eclipse occurs on the 14th day of the month of Adarru, and it begins in the south[c1] and clears in the north;[c2] it begins in the evening watch[c3] and clears in the morning watch.[c4] You observe his eclipse and bear in mind the

Figure 35 Ibbi-Sin, Fall Ur III



south. The prediction is given for the king of the world: The destruction of Ur. […..... will be] destroyed, *variant:* an order to destroy its city walls will be given. While the barley is being heaped up, the devastation of the city and its environs (will occur)."

I propose that there are two watch systems, #1: first, middle, last, which divides the night into thirds, and #2: evening and morning, which divides the night into halves. In that case, there is no discrepancy. My eclipse just barely ends after midnight at 0:02. The eclipse did start in the south, and did end in the north. So there are 0 discrepancies. Peter Huber proposes -2052.04.13, 21:27 to 0:19. His candidate does not clear in the north. Gurzadyan proposes -1911.03.16. This one ends way too early to clear in the morning watch.

Date	Advocate	No. of Discrepancies
-2052.04.13	Huber	1 (-c2)
-2004.3.25	Gregg[80]	0
-1911.03.16	Gurzadyan	1 (-c4)

Without Joshua's long day these eclipses would be visible on the other side of the world, but not in Shinar, in the eastern hemisphere. The effect of Joshua's long day is to make nearly all of the supposed lunar eclipses calculated according to uniformitarian principles invisible at their locations in the one hemisphere, and then again to make them visible in the opposite hemisphere. This is because a lunar eclipse can only be seen at night and twilight. Joshua's long day turned all the preceding nights into day, and vice versa. The same goes for solar eclipses. The delay of 12 hours in the earth's rotation offsets all retro calculations by 180.03084°. All the eclipse maps must be shifted 180 degrees, which is the same as 12 hours of clock time error or 1 degree change in delta T for every 4 minutes. A very few of the lunar eclipses are visible with or without Joshua's long day if they occur near sunrise or sunset, and if their duration is long enough for people on both sides of the world to see it.

The historical context is that Amar-Sin was king of Shinar for 9 years according to the king list, since the third dynasty of Ur did rule the land of Shinar. Please note that Shinar is the region of Mesopotamia and not the city of Babylon. Once the chronology of Ur III is fixed according to the above, Amar-Sin is the only candidate that we know about who could fit the bill for the battle of Siddim. The Amar-Sin proposal has been made before, but the eclipses were of no help (actually misleading) because they were incorrectly calculated. The synchronization of the eclipses raises the probability considerably. However, I must again yield to a note of caution. The reading and interpretation of the exact circumstances of a recorded eclipse is still an art involving variant readings, reconstructed texts, and the reconciling of contradictions based on worldviews and many assumptions. In some cases a reconstruction is built on a tower of suppositions, and reaching the bottom floor can be quite a chore. The tower might fall down before you reach the bottom. However, I hoped I have made the point that Joshua's long day must be factored in to get valid results.

The eclipse that attended Shulgi's death is called the "patricide eclipse." Supposedly, he was murdered by one of his sons in his 48th year. In the end we cannot be 100% sure that Amar-Sin was Amraphel for the simple reason that Shulgi might have had several sons with similar names. The more sure fire way to identify a culprit is to identify an unchangeable factor, and that is that the Scripture states he was the king of Shinar. Who in Shinar can march an army all the way to the west? Only a large military power in that area can do that, and that was the kingdom of Ur, the third dynasty. The king was in a brief alliance with the surrounding powers, also. I say brief, because alliances in those days were changed like changing clothes. Either Amar-Sin was already king in his accession year before setting out to Canaan, or he became king while acting as a prince doing a duty for his elderly father. King Shulgi had raised Ur to the greatest power in Shinar, so much so, that they hired the Elamites to do their military dirty work.

Another factor to consider is that co-regencies were exceedingly common, but commonly not mentioned in regnal chronologies, which give the years or year names, only as the sole reign of the monarch. The crown prince was appointed king, and his first manly duty was to take the army to deal with some situation when the old king is unable to mount an expedition. So even though Amar-Sin became sole king 2048/2047 BC, this is not a serious objection to the battle of Siddim taking place a few years earlier.

A similar situation occurs with Sennacherib (*Sîn-ahhī-erība*). He was the crown prince under Sargon during the Ashdod campaign, so he was the king of Assyria. Another son may have been

80 Simulate in Stellarium. Use custom **ΔT** values a = −43200 (long day correction), b=0, c=32, y=1820, l=−26.00. Set location to Nippur: 32.07.37 *lat*, 45.13.51 *long*. Astronomical date: -2004.3.25. First contact 20:23 local (UT+3) local at 31°; total at 22:23 local at 52°; Last contact 0:2 local at 62°. Tablet date: month XII, 24th year Ibbi-Sin, 14th day agrees.

named for the throne years earlier, and then replaced with Amar-Sin as co-regent by a fickle father. The other son then may have murdered his father out of spite.

Whatever the case, the Scripture names someone with a name beginning "Amar", as king of Shinar. As a last resort, the compiler of Genesis may have named him as king at Siddim (when he was only a prince), anachronistically.

I favor the hypothesis that Amar-Sin became king early on in 2048 BC after month IV, and that he was king during the expedition to Canaan. We don't know the logistics. However, a similar situation attended Nebuchadnezzar's first year, and his taking of Jerusalem in the 4th year of Jehoiachin. He had barely become king when operations against Jerusalem began.

Finally, we must always remember that it was the Almighty who allowed the cities of Shinar to be turned into piles of rubble because of their idolatry and sin. Trying to interpret these piles of rubble in terms of an evolutionary or humanistic worldview, without the absolute framework of the scripture to constrain it and judge it, is futile, and the disputes and debates that the archaeological community goes through shows that they have no unified scientific stance against the biblical framework. Therefore, opposition to the biblical answer can only be attributed to anti-biblical dogmatism, and belief in the religion of evolution.

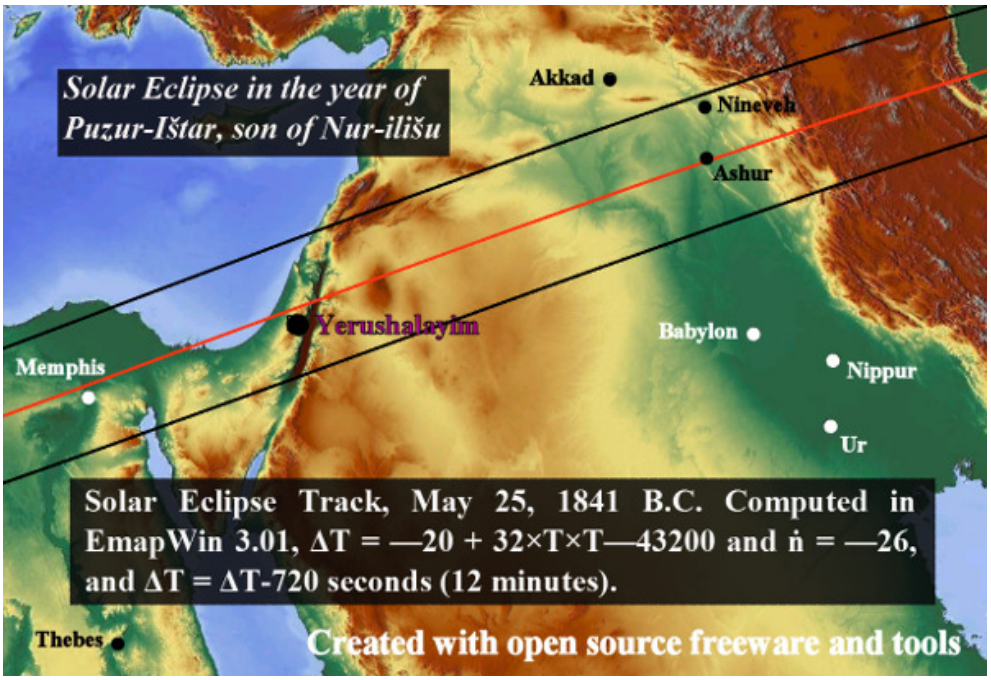
The Year of Puzur, Son of Nur

The Assyrians appointed an official to represent each year. This official is called an eponym by modern scholars. The Assyrian scribes kept lists of these officials which were then used for dating purposes. Instead of saying such and such a year, people would write ,"In the year of _____" and then fill in the name of the official for the year. To reconstruct Assyrian chronology we have to rely on copies of these lists, and being copies, they are not completely without error. There is some wiggle room therefore between various interpretations of possible scribal errors dropping out names or adding in names. Therefore we must resort to chronological synchronisms and astronomy to remove doubt where possible.

In the year of Puzur-Ishtar, son of Nur-ilišu there was a solar eclipse. Shamshi Adad was born the previous year, according to the Mari Eponym Chronicle. Teije Dejong states, based upon his reconstruction of the eponym list for this period that, "Using the chronological calibration of the Revised Eponym List (REL) by Barjamovic et al, I find that the time window in which the solar eclipse must have occurred can be constrained with 95% probability to the period 1856-1835 BC."

The Assyrian Eponym for the year after the birth of Shamshi-Adad I was Puzur-Ishtar in the Mari Eponym Chronicle. The eponym list is now placed by historians accurately enough that we can identify the solar eclipse recorded in that year. Without Joshua's long day, scholars have proposed 1838 BC and 1833 BC. We can dismiss the -1837.03.024 eclipse (aside from the fact it happened on the wrong side of the world) because it was a central annular eclipse occurring at sunrise. The rising sun was too low and did not dim enough for it to get noticed, and may be confused with fog or early morning clouds. The proposed -1832.06.24 eclipse would be an excellent choice (aside from the fact that it, too, occurred on the wrong side of the world due to Joshua's long day), but the historians cannot justify it. It requires deleting eponyms from the Assyrian lists. It is true that the year locations of all the eponyms are not known perfectly, but having an excess number of eponyms and not enough years to put them in is a bad situation.

Figure 36 Puzur-Ishtar Eclipse



Date	Advocate	Discrepancies
1841 BC	Gregg	0
1838 BC	----------	1
1833 BC	----------	1
current total discrepancies Gregg:		2
current total discrepancies Others:		19

The correct eclipse happened in 1841 BC, which is found by applying Joshua's long day to the -1840.05.24 eclipse and transferring it from where it has been supposed to occur in North America to the proper side of the world. Shifting it across the date line puts it on May 25, 1841 BC. See Figure 36. This solution does not require adding any eponyms that cannot be justified, nor does it require subtracting any. There is one other eclipse that comes up in 1843 BC (-1842.01.20 [19]; taking Joshua's long day into account). This would only require adding three extra unknown eponyms to the lists. This eclipse is somewhat outside of the comfort zone though, as its track was 358 miles west of Ashur. Making it visible in Assyria would require a large correction to delta T on the order of 2300 seconds (about 40 minutes), and it would make a brief eclipse near sunrise. This is hardly an eclipse that many people would notice.

Historians and astronomers have taken extreme liberties with proposing which eclipse was meant in the Assyrian record, because they have had no agreeable choices to work with. Once Joshua's long day is taken into account, then the perfectly reasonable eclipse may be found that fits the history.

The 1638 solution and Joshua's long day

The 1638 BC Venus solution is the foundation of the low middle chronology, which is only one of two that are thought to be viable by historians (the other being 1646 BC). Despite this, many outrageous Venus solutions have been proposed. The foregoing astronomy, corrected by Joshua's long day, links up directly with the 1638 BC solution for the Venus Tablets. See 1638 BC, or **2502** Column S3-4 for the first year of Ammizaduga. Of course, the fact that everything works out in the chronology is the best evidence of its correctness. Nevertheless, John Weir gives it his endorsement as a good probability:

"The most that can be said on the evidence available, is that the 'middle chronology', based either on Smith and Ungad's solution (1646), or the solution dated eight years later (1638), is the most probable" (*The Venus Tablets of Ammizaduga*, John D. Weir, 1972, page 15). It turns out that 1638 is the correct synchronism of Ammizaduga year 1 to the astronomical data. It may be possible to explain some of the long periods of invisibility recorded in the tablets, when Venus should have been visible, due to the Santorini ash. Radiocarbon dates of the eruption put it between 1642 and 1612 BC within 2 sigma. Another measure puts it between 1627 and 1600 within 2 sigma. We need not take the narrowness of the error ranges too seriously. Scientists regularly publish new results outside the error ranges of previous results! That does not give one a lot of confidence in error ranges. An error range only tells you how much a researcher is willing to admit they could be wrong. It does not tell you how much they are wrong, or how much less they estimated the error range so that they could retain a shred of dogmatism in their arguments.

Lunar Month Matching

Lunar month matching is an attempt to correlate an archaeological record of a series of month lengths with astronomical calculations to find out where those months best fit into history. Lunar months seem to have an irregular pattern of 29 or 30 days. In theory, if we have a written record of when 29 and 30 day months occurred in the past, in a particular year, or years, we could calculate what the actual month lengths were for those years and then match the written record to the calculated month lengths. Since the absolute dates of the calculated months are known, the written record is thereby dated by absolute astronomical dates.

The attempt to locate written records of month lengths in the appropriate year is called lunar month matching. The reality of LMM (lunar month matching) is far from the theory. Firstly, that seemingly random pattern of 29 and 30 day months have repetitive cycles. The most obvious is 29 30 29 30 29 30.... When the moon moves more slowly, with strings up to 30 30 30 30, or when it moves on the faster side of the elliptical orbit, 29 29 29. There are longer term repetitive patterns.

Secondly, the written records are far from complete. Peter Huber collected 154 month lengths for Ur-III.[81] Of these, 38 month lengths are 29 days, and 116 are 30. The period covered is about 30 years: Shulgi 40-48, Amar-Sin 1-9, Shu-Sin 1-9, Ibbi-Sin 1-3. That covers just 30 years. The number of months in 30 years are: 30 x 365.25 / 29.5 = 372. Of these, 53% are expected to be 30 days: 197. About 41% of 30 day records are missing, i.e. 81 of 197 records. Of the 29 day months, 79% are missing.

Thirdly, the customs of ancient people did not achieve a 100% accuracy rate in observing the new moon when calculations would say it could be seen. Using Neo-Babylonian observations as a control, we find only a 90-92% accuracy rate. And this rate will be too high for Ur-III. Intercalation of the year was regularized in late Neo-Babylonian times. It was haphazard under Babylon I and Ur-III. If they did not have it figured out then, it suggests that their observation rate for new moon crescents was also not as strict. This can actually be tested. Some of Huber's data were observations from two different locations. In Huber's model, he has 14 cases of jointly attested months between Drehem (a suburb of Nippur) and Umma (another city). He says four of those observations disagree between the two places (pg. 38). Only 24 of 28 (14 x 2) observations can be right. Somebody did not observe correctly four times. Those 14 cases represent 28 observations of which 24 appear to be correct. The success rate is: 24/28 = 86%. The two places are close enough that weather should not have been a factor in the difference.[82]

Fourthly, bad weather can switch the sequence of 30 and 29 day months. If a storm front prevents the moon from being seen, then it may be assumed that the month is to be 30 days about 50% of the time. And it may not be 47% of the time. So, if weather impacts 30% of observations, then .3 x .5 x .47 = 0.07 = 7%. We may expect 7% of the determined month lengths to be wrong because of weather. Uniformitarians will question whether the weather could affect 30% of the observations. This is because they do not accept that earth's climate has been undergoing a non-uniform change. After the flood, the oceans were about 80º F. Rainfall and snow storms were more frequent. This state of affairs lasted for some 700 years after the flood (2483-1783 BC). The seas were cooling to their present day values. The month length data comes from the years 2056 to 2027 BC), which is only 427 years after the flood. According to Michael Oard, a weather scientist, the ice age reached its maximum 500 years after the flood. So, we cannot say with any assurance that lower Mesopotamia enjoyed clear desert skies for most of the year.

Therefore, I have to dock the expected success rate by another 7% for bad weather: (86% - 7% = 79%). Finally, we have to account for the fact that most of the records are cuneiform tablets generated by scribes logging economic transactions. What does a scribe do when it is the 30th day of a month, and no one has yet reported a new moon? Does he just put down the 30th day? Does he leave it unchanged if it turns out to be the 1st day?

What if the custom is not to be super strict about the collection of new moon observations from distant points? This alone is enough to scramble the month lengths. It could be that the cities were content with calling a crescent on day 1 or day 2 the first day of the month. A month might end up 30 days simply for lack of interest in looking for the first possible visible new moon. It takes a lot of people looking in different places to achieve the theorized success rate. So they are content for the second day of a crescent to be the first day of a month, which makes the last month 30 days, when it should have been 29, and probably shortens the next month to 29 days.

That's the problem. "It should have been." By whose standard do the months begin at the exact first visible new moon? And did the Sumerians of Ur-III really care about the exactitude of times and seasons that much? Do we dare assume that the peo-

81 page 38-39. *Astronomical Dating of Babylon I and Ur III*, Peter J. Huber.

82 Umma: 31°40′0″N 45°53′16″E; Drehem: 32°07′37″N 45°13′51″E. Bad weather is likely to affect both places about equally at the same time. Therefore, prolonged months will correlate when the weather is a factor at both places.

ple of Mesopotamia held themselves to a biblical standard of accuracy and truth? Hardly. They had become a bunch of superstitious idolaters because they had rejected the very foundation for such standards. Therefore, I consider the chances that the month lengths are randomized very good. Based on the haphazard intercalated months, I would suggest that they were also haphazard in their month lengths.

Peter Huber states that he matched 154 months between 2103 and 2074 BC with only 51 misses. That means 103 hits, or a match rate of 103/154 = 67%. The mean value of a randomized data set is 53%. Is there really any value in the 13% difference here? And why is Huber's score 12% less than might be possible by disciplined observations?

He tells us how it was done. He tried every year from -2213 to -1890 BC for Amar-Sin year 1. He says "Out of 4000 alignments tried, the best match (49 misses) is out of season by 5 months. The second best (51 misses, 51/154 = 33%) is the already mentioned one, with Amarsin 1 beginning with lunation #-13516 in -2093."[83] The historians are not happy with Amar-Sin 1 = 2094 BC. What they really want to see is 2047 BC ±4 years, and the more that is out of line, the more likely they are to reject the result as inconsistent with historical records and synchronisms.

Peter ran a test to see if a randomized data set could achieve the same result. He tried 30,000 alignments representing a test period 7.5 times as long as his search range, and he found 19 cases with 51 or fewer misses. A simple calculation shows we should expect two cases in 4000 tries (19/7.5 = 2.5). The 4000 tries were done over 323 years. There will be one random hit every 129 years. One could go forward of the correct dating 65 years and backward 65 years, and expect a hit. It might be more or less. Random matches might tend to deviate from the mean a bit. Peter says, "These probabilities admittedly are not very reliable; the number 19 entering in their determination is too small to have statistically stabilized, and it could just as well have happened to be 14 or 24 instead of 19." Still, he says, "But they are still small enough to give us at least a moderate degree of confidence in the correctness of the chronology" (i.e. Amar-Sin 1 = 2094).

If that number were just 21 instead of 19, then 21/7.5 = 2.8 and 323/2.8 = 115 years. Now you can expect a hit in ±58 years. I'm willing to bet his hit only 46 years from the correct day is not outside of one standard deviation for a randomized hit. So what does it take to give an otherwise randomized data set that hits 53% on average a 13% edge at 67%? It only takes a willingness to disagree with the historians by 46 years.

Huber tells us that the chances of an accidental match with 51 or fewer misses is only 0.063%. But if you go looking for a match, it is 100% guaranteed you will find it. You only have to search far enough. Huber states concerning his Neo-Babylonian control experiment, "for a random alignment we can expect that about 53% of the 30-day months will match. The corresponding miss rate of 47% is uncomfortably close to the above [Neo-Babylonian] miss rate of 33% for a correct chronology." This is just 14%.

Concerning his control experiment using Neo-Babylonian data with known historical dates, Huber says, "In no case did the true match stick out and achieve the best score. For instance, with the 95 Sachs data, the true match had 32 misses, but there were 266 alignments (1.33% of 20000) with 32 or fewer misses, so it did not even make it into the top 1% group."

There is a huge problem with the control experiment: it is 1300 years later than Ur-III. It is only a valid control if one believes in cultural uniformitarianism. We have to add Joshua's long day to that also, since Huber did not correct for it. In the end, Huber's month matching is no threat to the biblical chronology or the results of Joshua's long day. There are plenty of scholars and experts with Huber's worldview that already disagree with his results, and for good reasons that have nothing to do with Scripture.

Month Matching with the Venus Observations

Peter Huber and others, like myself, have endeavored to match lunar month lengths in the archaeological record to theoretical computer calculated month lengths. If a tablet assigned to a king, a year, a month, and a day has 30 days, and the computer calculation also says the month had 30 days, then we call it a match. If the tablet date cannot be matched then we call it a miss. A percentage of matches based on the total 30 day months in the archaeological record texts is computed. The success rate has not been good for either the standard middle chronology or the low middle chronology. Using what we know about Joshua's long day, can we improve the scores? The standard middle chronology scores 30% using my method. I used my method as a control with and without a correction for Joshua's long day on the two competing middle chronologies (Ammizaduga Year 1 = 1646 and Ammizaduga Year 1 = 1638) respectively, which are based on valid solutions to the Venus tablets.

First I ran the calculations without Joshua's long day for the 1646 solution ($\Delta T = 28.75 \times T^2$ and $\dot{n} = -23.8946$) using the sample size of ten 30 day months supplied by Huber. The score was a terrible 30%. Peter Huber reported a match rate of 20%. I then ran the calculations with the correction for Joshua's long day on the 1646 Venus solution with a result of 60% ($\Delta T = 28.75 \times T^2 - 43200$ and $\dot{n} = -23.8946$,), again using Peter's ten month sample. I then ran the calculation for the low middle chronology Venus solution at 1638 BC using John Weir's sample size of 25 months.[84] The result was 52%. The choice between 1646 and 1638 is a statistical tie because one value which is inside one standard deviation will cause the values to overlap. However, both solutions are much improved over the 20 and 30 percent scores without Joshua's long day. I conclude that both 1646 and 1638 cannot be criticized for too poor lunar matching after we put Joshua's long day back into the equation.

Just how valid is lunar month matching? Firstly, 53% of all lunar months are 30 days. Therefore, in making random choices we expect an average of 53%. Second, the weather causes an old month to be 30 days about 15% of the time when astronomy would make it 29, and we cannot predict the weather in the past where no records of it exist. Third, perfect seeing conditions, low extinction factor and elevated location might cause the moon to be seen early in up to 38% of potential cases (Yallop "C" cases) changing a month length from 29 to 30 or 30 to 29. Fourth, we must distinguish between the month lengths written as a record of history and economic texts written on the spot for business purposes. Most records are simple economic transactions. No commercial house is going to wait for a new moon report. They are simply going to date the text as the 30th day unless they are

83 page 38-39. *Astronomical Dating of Babylon I and Ur III*, Peter J. Huber.

84. *The Venus Tablets: A Fresh Approach*, John D. Weir, JHA, xiii (1982), Table 1.

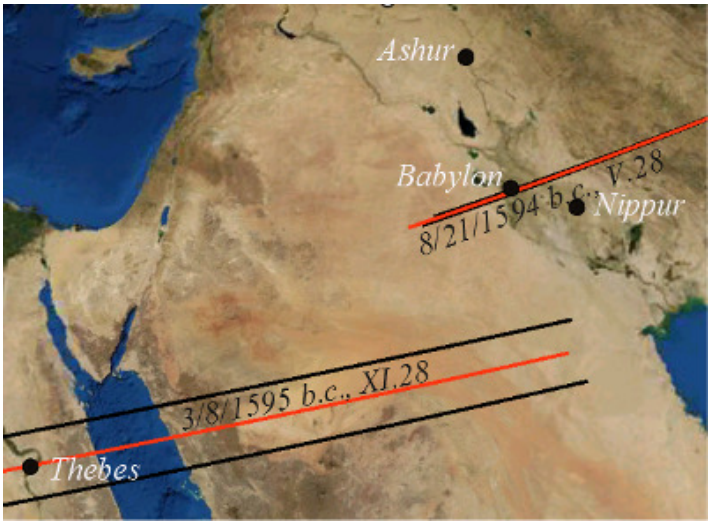
informed that the new moon was seen, or they may simply assume that 30 day and 29 day months alternate. No one knows how often this happened. No one knows how often a scribe simply erred. Finally, Santorini blew up in the spring of 1632 BC which is right in the middle of the Venus observations, thus we might expect year 7 and a few years after of Ammizaduga to be complicated with the ash haze from the volcano. Having tried to make the matches for several Venus solutions, I have concluded that there are enough unknowns to justly conclude that a randomized result is all one can expect. And that is exactly what we get for Venus solution 1638. We get a 52% match rate. I conclude then, that Joshua's long day and the Santorini explosion remove the astronomical burdens laid on the middle chronology, and this is a burden that secular chronology will have to bear, since they do not believe that the sun stopped for 12 hours.

As an addendum, I will add that the 1638 BC chronology, and its month matching, is a much better control experiment to form a basis of what to expect for the Ur-III months already discussed in the preceding section. We should only expect 53%, and should not feel bad unless the match is grossly under it.

A Solar Eclipse Attending the Fall of Babylon

One of the difficulties with eclipse records is that eclipses were treated as omens of doom. The idolatrous priesthoods often interpreted an eclipse as a sign of doom after the doom had occurred. Objectively speaking, if the eclipse portends the future, then it is not of much value, because no one ever knows the doom intended until the doom actually occurs. Nevertheless, the priesthoods persisted in their interpretations because it maintained their prestige with the people, and deceived them with false wisdom. We have the modern equivalent of such priests, such as Carl Sagan, Stephen Hawking, and others of the elite astrophysical discipline of the modern age, who spend a good deal of time interpreting the heavens as omens of evolution.

Figure 37 *Babylon Targeted*



When it comes to dealing with eclipses, we have to separate the observations from the prognostications. Such is also the case of an eclipse attending the fall of Babylon. We cannot say it presaged it, because eclipses have no such meaning. It was all in the minds of the idolatrous priests.

The end for Babylon came in 1588 BC when Mursili I led the army of the Hittites thousands of kilometers into Mesopotamia and sacked the city of Babylon. The Hittites remained long enough to loot the city and then returned to Anatolia. This defeat happened in the 31st year of the last Amorite Babylonian king Samsu-Ditana. Now it would certainly be more politically astute of the priests to predict this ignominious defeat even if it was after the fact, either to impress their enemies or to assure the people they knew why it happened. They therefore found two eclipse observations that many of the people would have seen and cobbled them together into an omen.

The situation actually lines up as follows:

1595 BC [-1594.03.08] Solar Eclipse on Shabatu 28
1594 BC [-1593.08.21] Solar Eclipse on Abu 28[85]
1593 BC [-1592.01.31] Lunar Eclipse on Shabatu 13.[86]

First, the first solar eclipse for 1595, (-1594.03.08). The omen goes as follows, "On the 28th [of Shabatu][87] you observe,

85 Calculated via longitude shift of 180° in EmapWin 3.01 to simulate Joshua's long day. Since this program uses $\Delta T = -20+32$ x ((year-1820)/100)^2 year < -800 and DE406/422 -26"/cy2 tidal value (F.R. Stephenson, 2004-5), the resulting equation is: $\Delta T = -20 + 32\,T^2 - 43200$; EmapWin uses Besselian Elements. With no adjustments (other than the long day), the eclipse hits Babylon precisely (Lat: 32.5, Long: 44.5 (-135.5 after shifting). At sunrise local std time 5:15:6, the sun was -0.8°, and the magnitude was 0.633. Max eclipse occurred at 5:35:41 with the sun at 3.3° (mag. .997). If the location is moved to 32.415° (about 6 miles south), then the magnitude is 0.999.

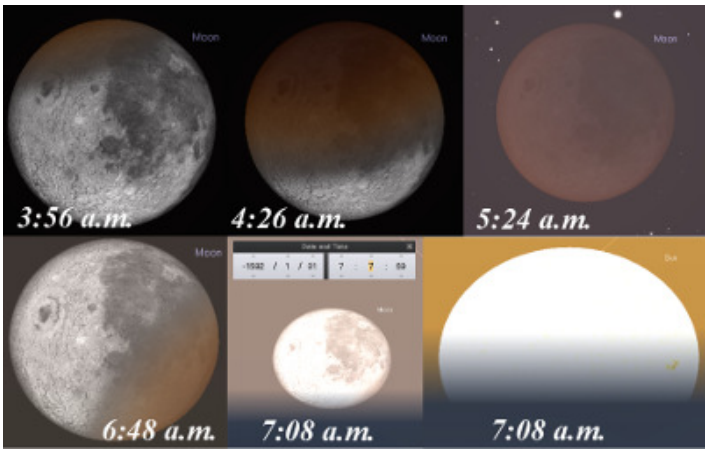
86 Calculate in Stellarium 0.12.4. for -1592.01.31. Use custom ΔT values a = −43200 (long day correction), b=0, c=32, y=1820, l=−26.00. Set location to Nippur: 32.07.37 *lat*, 45.13.51 *long*. The eclipse began -1592.01.31 at 3:39 local time (UT + 3hrs). There was just a trace of shadow left at moon set, and the sun was rising at the exact same time at 7:08 local. See Figure 38.

87 The month Shabatu (XI) is supplied from the circumstances of the lunar eclipse that precedes the solar eclipse in the EAE omen text. However, the order of the lunar and solar eclipse is mixed up, and also the time between them. The priests simply cobbled together two records out of order to make the omen. The first solar eclipse fits the correct month, but the second solar eclipse better fits the place.

and an eclipse is close by;[88] it begins and makes full (its time); it (the shurinnu [emblem]) will show you the eclipse. Observe his eclipse, (that of) the god [sun] who in his eclipse was visible and disappeared, and bear in mind the north wind. The prediction is given for Babylon: the destruction of Babylon is near."

This eclipse is drawn on Figure 37 at the bottom through Thebes, where it was probably first seen, but we cannot rule out that it was not seen in Arabia near Babylonia. It is possible that this eclipse was reported to the Babylonians later. It has the advantage of being in month XI.28 (correlating to the standard

Figure 38 Shabatu 13 Eclipse



month XII.28). The second solar eclipse hit Babylon near dead on, or at least its suburbs, in 1594 BC, (-1593.08.21). In this case the text should not be emended with "Shabatu." Rather, it was an "Abu" eclipse that stabbed Babylon.

The last eclipse here is within a stone's throw of Joshua's long day. And it is probably this one that concerned the Babylonians greatly, even if the date was mixed up later in the omen with the lunar eclipse about 6 months later. It occurs just before Joshua's long day happens, and so we must make the correction for the long day in calculating it.

Finally, in 1593 BC on Jan. 31 (equating to Shabatu 13, XI.13), a total lunar eclipse occurred. The EAE Tablet 20 text reads, "If an eclipse occurs on the 14th day of Shabatu (month XI), and the god [moon], in his eclipse, becomes dark on the side south above [the top of the moon @ 3:56], and clears on the side west below [@ 6:48]; the north wind [the shadow @ 3:56][89] in the last watch begins [2 am to 6 am], and he [the moon] is seen with the sun [@ 7:08]. His horns bend (toward) the sky [6:48 am][90] His entire shurinnu [emblem] was not obscured, but disappeared."[91] See Figure 38.

The 31st Jan. 1593 BC was Shebat 13 in the standard calendar (XI.13). The tablet gives the 14th because this was the standard procedure for designating a lunar eclipse that could happen from the 12th to the 15th. The fall of Babylon to the Hittites was in 1588 BC, which is near enough to the eclipse for the pagan priests to cobble into a prediction. The eclipse preceded the fall by six years. The pagan priests manufactured eclipses into predictions after the fact and then revealed the fulfillment later. We don't know why they used this particular eclipse. But it is the one that fits.

The eclipse began -1592.01.31 at 3:39 local time (UT + 3hrs). There was just a trace of shadow left at moonset, and the sun was rising at the exact same time at 7:08 local. Figure 38.

Date	Advocate	Discrepancies
SE 1595	Gregg	2 (not double, misses)
SE 1594	Gregg	2 (date/not double)
LE 1593	Gregg	1 (proximity to fall)
-1531.04.14	Low Chron LE	5[92]
-1531.04.29	Low Chron SE	2 (wrong month, misses)
-1655.11.27	High Chron LE	5
-1655.12.12	High Chron SE	3 (misses, annular, mon.)

Gregg	3 total discrepancies
Low	7 total discrepancies
High	8 total discrepancies

Total Gregg discrepancies:	4
Total Other:	24

The last EAE omen seems to be messier than those pertaining to Akkad and Ur III, and appears to reflect less discipline in the concoction of the eclipses with the predictions. It would appear that the descendants of Hammurabi had let the precision of their science be further poisoned by their idolatry. This also appears to be reflected in the Tell Muhammad eclipses, which I now turn to.

The eclipse references appear in two economic texts with a dual date formula:

IM 92139 (1) "Year 38 that Babylon was resettled." (2) "Year in which the moon became invisible, an eclipse occurred. Month of Nisannu" text type: loan of silver.

IM 92134 (1) "Year 38 that Babylon was resettled." (2) "Year in which 'fruit' was eclipsed. Month of Abu, Day 10" text type: loan of silver.[93]

A lunar eclipse may occur once every six months. Therefore, if an eclipse happens in month I, then a second eclipse may happen in month VII (or the first in XIIb and second in VI). We see that the two eclipses mentioned for year 38 are not spaced correctly. Any proposed match will face this discrepancy. One way around this is that the two records are following two different intercalation schemes, as was often the case when trade involved different cities.[94] The second eclipse is stated on day 10, which is

88 The first day of the month was by sighting the crescent in the evening. The astronomical new moon would typically occur on the 27-29th days of the month preceding first visibility for the next month, and this period is when a solar eclipse could occur.

89 The shadow covering the north of the moon is compared to a wind blowing a cloud over it. My interpretation.

90 "His horns bend toward the sky." The convex apex of the crescent points at the sky as seen at 6:48 am.

91 This seems to be saying the moon was clear of the eclipse, and then quickly disappeared.

92 1. Too partial to be noticed. 2. Does not start in the right place. 3. Did not clear before setting. 4. Historians don't like the date. 5. The month is wrong.

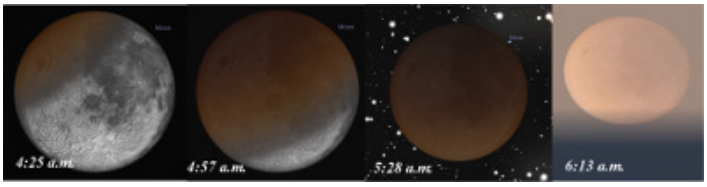
93 pg. 86, Mesopotamian History and Environment, De Meyer and Gasche, Series II; oi.uchicago.edu.; *Dating The Fall of Babylon*, Gasche, Armstrong, Cole, and Gurzadyan; Oriental Institute of the University of Chicago, 1998.

94 Another possible explanation for the Babylonian calendar intercalation here, is that the first document was dated before the month had been determined to be II Adarru, but after the eclipse had occurred and after the year name had been given, and thus remembered as Nisannu. The next month became the official Nisannu. The second eclipse occurred in Ululu and then a II Ulu-

not possible, and therefore may be the date of the silver loan and not the eclipse. Therefore, being as parsimonious as possible, day 10 has to be dismissed as an eclipse date, and the month of Abu (month V) must be correlated for standard month VI, and the month of Nisannu must be correlated to the standard month XIIb.

The first eclipse took place in the month of Nisannu 1549

Figure 39 Tell Muhammad Nisannu Eclipse



BC (-1548.03.23). The Nisannu date corresponds to the standard II Adar, day 13. The Babylonian calendar, therefore, preceded the Biblical calendar here by one month. The eclipse began at 3:56 local time; it became total, and set at 6:15 local time. Figure 39.

The words "the moon became invisible, an eclipse occurred", strongly suggest that the moon set while eclipsed. This is exactly what happened at 6:13 am. The moon set while eclipsed, and thus became "invisible," and the sun simultaneously rose.[95] See Figure 39.

In the same year another eclipse took place in the month of Abu (-1548.09.16), corresponding this time to the standard month VI.14. The eclipse began at 20:00 and ended at 23:30. See Figure 40.

Other solutions have been proposed for the Tell Muhammad eclipses. However, they are happenstance solutions based on contrived chronologies engineered to correlate to an eclipse that happened, but which is not the actual eclipse mentioned in the archaeological record. The reasoning reeks of desperation. Gasche dated IM 92139 to 16 May 1459 BC. There is no second eclipse in this year that can be argued to be in month V. The moon rose partially eclipsed at 18:34 and cleared 50 minutes later at 19:24 before reaching 10º altitude. Gasche adopts this eclipse, stating in footnote 353, "We presume that the eclipse mentioned in the Tell-Muhammad texts was total." But the proposed eclipse was not total in Mesopotamia. Further "the moon became invisible" has been changed to "became visible" because the stated eclipse happened at the rising and not the setting.

Lappin dates IM 92139 to 16 March 1372; this is 53 years after his supposed date for the sack of Babylon by Mursili I. Then to find the Abu eclipse (IM 92134) he suggests 20 September 1373 BC.[96] This is purely desperate reasoning. Firstly, if his 20 Sept, 1373 eclipse is in month V, then the 16 March 1372

Figure 40 Tell Muhammad Abu Eclipse

eclipse is necessarily in month XI, which he suggests is the end of year 38. This is outright rejection that the first eclipse occurred in Nisannu of year 38 (Month I), since he put it after the Abu eclipse. Further, leaving Babylon unoccupied by the Kassites for 15 years is unreasonable. Mursili I sacked the city and abandoned it in the same year he attacked it. One year is most reasonable for its reoccupation. Finally, Lappin states "the moon rose while eclipsed" and cites Peter Huber's review of Gasche. The text does not say the "the moon rose while eclipsed." This appears to be an *ad hoc* interpretation of "the moon became invisible [while] an eclipse occurred" which better means the moon set while it was eclipsed.

The scribe who wrote the first document was writing in a month thought to be Nisannu, and thus the beginning of year 38. He wrote after the eclipse, thus in the second half of the month. Nisannu is either the date of the loan or the date of the eclipse, but if it is the date of the loan, there are no other months in the same year before Nisannu, so it is *ipso facto* the month of the eclipse.

lu was intercalated. The second document was written on II Ululu, day 10, the date of the loan, but an eclipse had been seen the previous month, and the scribe put it down as in Abu (month V) forgetting that the month was II Ululu, and that he should have put down Ululu I for the eclipse. Other explanations are possible.

95 Gasche states in footnote 349 on IM 92139, concerning the word "invisible" that "it should probably have an ingressive sense, "to become invisible."

96 pg. 26, "The Venus Tablets of Ammizaduga and Attested 30-day Lunar Months in a Reassessment of Babylonian First Dynasty Chronology," David F. Lappin.

The Ugarit Eclipse and the Sea People

The tablet KTU 1.78 reads, as far as I can tell, "shamed, day of new moon Hiyyar, the sun enters her gate, Reshep. Two livers examined: danger!"[97] The liver omen is assumed to confirm that the text refers to an eclipse. But, I pity anyone who is stuck trying to build a chronology on this text, or who even uses it as a linchpin. The history of uncertain meanings are these:

BTT	two suggested meanings, "six" and "shamed"
HYR	two suggested months, II and XI
RBT	"enter in," or "set" or "grow dark"?
TGRH	"her gatekeeper" or "her gate"
RSP	"Mars" or "Taurus" or "Pestilence."

97 "BTT YM HDT HYR 'RBT SHPH TGRH RSP."

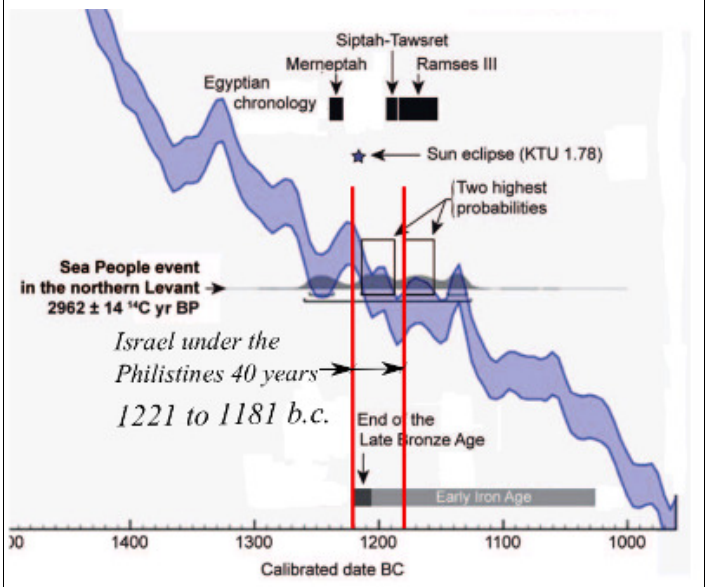
The text has been made to fit at least four different solar eclipses. I believe the option with the fewest discrepancies would be 1223 BC, for which the text can be 'amplified' as "[The sun was] shamed, [darkened] [on the] day of the moon [conjunction] of Hiyyar [=Adar]. The sun [appears to] enter in her gate [i.e. becomes eclipsed], [war and] pestilence." The tricky name "Reshep" is a false god. Though Mars may have been visible during the eclipse north of Ugarit, I think the scribe knew it was there but did not see it. The word is the 'interpretation' of the eclipse: war and pestilence. Who knows, perhaps the tablet was inscribed after Ugarit was under siege and pestilence, and got burned in the final attack. Thus another self-fulfilling prophecy

of a people wondering why they are doomed. Small comfort from lying priests who examined livers to 'confirm' their message of doom. Let us now turn to something more factual:

The Philistines (sea peoples) took over the coasts of Israel in 1221 BC, and caused Israel to serve them for 40 years. The sea people destruction layer at Ugarit, therefore, would likely be very close to 1221 BC, up to two years before, and probably not much after, as it seems the sea peoples would have defeated the coastal cities before taking on Israel in the hill country. Therefore, only two eclipses need be considered: -1374.05.03 and -1222.03.05.

The tablet in question was burned and found in the ruins of Ugarit, so it had been caught in a conflagration. There are two fires that we know about. One destroyed part of the Ugaritic palace, and the fire is referred to in a report to Akhenaten written

Figure 41 Calibrated C-14



Adopted from Kaniewski D, Van Campo E, Van Lerberghe K, Boiy T, Vansteenhuyse K, et al. (2011) The Sea Peoples, from Cuneiform Tablets to Carbon Dating. PLoSONE 6 (6): e20232. doi:10.1371/journal.pone.0020232.

in his 12th year from the nearby king Abi-milku of Tyre, who kept an eye on the north for the Egyptians: "Fire destroyed the palace at Ugarit; (rather) it destroyed half of it and so half of it has disappeared. There are no Hittite troops about." (EA 151:55-58).[98] This fire was not the result on an attack or overthrow, so we may expect it was accidental, and that the mess was cleaned up and the palace rebuilt. The other fire was the one that attended the overthrow of the kingdom of Ugarit by the sea peoples. In this case everything burned, and a destruction layer was left for archaeologists. This is where I suppose the tablet was found.

Another factor is that no archive of astronomical texts was found at Ugarit. KTU 1.78 is a unique specimen. The KTU 1.78 tablet was likely a fresh report of an eclipse and the divination associated with it. Then it was simply caught in the sea people conflagration before disposal and burned. There is one discrepancy with this eclipse to be noted. It requires a $\Delta T+$ =1200 seconds which might be feasible, but seems a bit much to allow, if the tablet notes a valid eclipse.

The 1375 eclipse is unlikely because it does not correlate to the month of Hiyyar, which was the last month of the old year in the calendar used at Ugarit.[99] The 1223 eclipse is right on target. The 1375 eclipse also requires a large $\Delta T+$ =1200 correction, and so cannot surpass the 1223 eclipse, here. And again, it is hard to explain how a partial fire preserved an archaeological record when it was neither earthquake or war that caused it.

I have adapted a chart of carbon dating for the sea people invasion to reflect the biblical dates (the carbon dates and probabilities are unaltered; Figure 41). Observe that the calibration curve levels out for about one hundred years, and that the probability curve to the left is almost as large as the two called "highest probabilities." Really, it should say four highest probabilities. It is arbitrary to single out two when their neighbors are almost the same!

Just who are the sea peoples? They are the people known as Philistines in Canaan. Though they eventually adopted Levantine languages they do not come from the Levant. They hail from Europe, having come through Greece and north-west Anatolia. They are the sons of Japheth come to dwell in the tents of Shem and to make Canaan their slave. Their invasion is a continuing way point in of the saga fulfilling Noah's curse (Gen. 9:27). There were Philistines in Canaan before the sea people invasion, but they were not the imperial naval power that faced off with Israel and Egypt until they were reinforced by the invasion of their kin from the north.

The question I pose here is, which other chronology of the Scripture, other than this one, actually fits the archaeological and carbon dating evidence so neatly? Some may. Most will not. The reason that it fits is that I started with the biblical chronology first, and then used it to discover the archaeological truths amid all the archaeological confusion. And anyone else who begins with Scripture and seeks to understand the world through it will gain insight.

The Sea Peoples Defeated

When Samson pulled down the Philistine temple in 1183/1182 BC, the sea people had had enough with Israel and her God for that generation. Without a battle, Eli, the high priest, became judge over Israel. It appears that the Philistines subsequently decided that a hands off approach to Israel was best. They were too busy in any case, planning their invasion of Egypt, which took place in the 5th year of Ramses III, in conjunction with the Libyans.

> In Year 5 of his reign, the Sea Peoples, including Peleset [Philistines], Denyen, Shardana, Meshwesh of the sea, and Tjekker, invaded Egypt by land and sea. Ramses III defeated them in two great land and sea battles. Although the Egyptians had a reputation as poor seamen, they fought tenaciously. Ramses lined the shores with ranks of archers who kept up a continuous volley of arrows into the enemy ships when they attempted to land on the banks of the Nile. Then the Egyptian navy attacked using grappling hooks to haul in the enemy ships. In the brutal hand to hand fighting which ensued, the Sea People were utterly defeated. (Ramses III, wiki).

And they may have already been deployed when Samson reminded them of the power of the Most High. They really did not want to jeopardize their supply lines and home bases. So a truce with Israel was called for, and Eli became Judge in the year immediately following this invasion.

98 *A Primer on Ugaritic: Language, Culture and Literature*, William M. Schniedewind, Joel H. Hunt, pg. 14, also *Ethnicity and Identity in Ancient Israel*, Kenton L. Sparks, pg. 99.

99 I realize there are arguments trying to rescue this eclipse by supposing a II Hiyyar was due. They were not clearly so incompetent at equinox prediction that they would have called for such a late Hiyyar in 1375 BC.

They were confident of victory against Egypt because of their superior weapons and tactics, and unlike Israel, they did not have difficulties with the Egyptian gods. Besides, the loot in Egypt was better. But when the sea peoples invaded, they overextended themselves like Napoleon and Hitler did when they invaded Russia. Egypt was a large country with a long river, and the sea people's ships and forces were well overextended:

> "The foreign countries (ie. Sea Peoples) made a conspiracy in their islands. All at once the lands were removed and scattered in the fray. No land could stand before their arms: from Hatti, Qode, Carchemish, Arzawa and Alashiya on, being cut off [ie. destroyed] at one time. A camp was set up in Amurru. They desolated its people, and its land was like that which has never come into being. They were coming forward toward Egypt, while the flame was prepared before them. Their confederation was the Peleset [Philistines], Tjeker, Shekelesh, Denyen and Weshesh, lands united. They laid their hands upon the land as far as the circuit of the earth, their hearts confident and trusting: 'Our plans will succeed!' " (Battle of Djahy, wiki).

The sea peoples' final defeat came at Djahy in south Lebanon in the 8th year of Ramses. Then, Israel was allowed to complete a full 40 years of peace from the first year of Eli.

Just how valid is radiocarbon dating?

Since I have had occasion to refer to C-14 dating, we should ask and answer this question the best we can. Radiocarbon dating by itself is a blunt tool. By the time we go back to the 1200's BC it disagrees with historical dates by almost 300 years. The irony is that it gives dates 300 years younger than they really are. C-14 is theoretically invalid for dates more than 60,000 BP(before present), and the theory itself is questionably invalid for dates before 40,000 BP. These limits are intrinsic to the method. C-14 also depends on assuming a constant production of radiocarbon, and the dating of samples that actually preserve the C-14/C-12 ratios they were deposited with or died with, without contamination. This last limit will prove the most restrictive. After calibration, any date prior to 2450 BC can be tossed out the door, as Noah's flood surly renders the model invalid. Any calibration method resulting in antediluvian dates also needs to be re-calibrated itself, using the historical dates from Scripture.

Valid C-14 (with a large ±) depends on calibration and quantity (large sample size). A quantity of dates is required from any given context. A single, or a few dates can indeed be contaminated such that they are deceivingly wrong. And the farther back in time one goes, the smaller the available sample size becomes.

Calibration means that for any given historical period items of known historical age must first be dated historically, or by another method more valid than C-14. Then the same items are C-14 dated. The difference in the dates becomes the standard correction factor for all C-14 dates coming from that era and context. Calibration must also be done for locations. Differences are showing up between Europe and Anatolia, and Egypt and Anatolia. Area's submerged under an ice sheet 700 years after the flood are likely to give divergent results from those that were not.

Calibration requires a sample to have a proved context. It must be known from other dating methods that the C-14 sample is sandwiched between valid dates, i.e. it cannot be older than x and younger than y. It works like this: One mass of samples I call A is both historically dated and C-14 dated. A correction factor is determined. Sample mass B is both historically dated and C-14 dated. A correction factor is determined that is relatively close to the same as that determined for sample mass A. We then date sample mass C for which we have no historical dates except that we know C is between the dates of A and B. So we know that the site of C is sandwiched between A and B. A and B can be 240 years apart. C can be placed in the 240 years ±40 years. Even after all that, it is still a blunt tool, and is only able to tell us which third of the 240 years the sample comes from.

Carbon-14 is a step below tree ring dating, and two steps below dating based on written history, and these latter two are used to calibrate the method. The pitfalls of historical dating are well known, depending on transmission of the history, and integrity of the source, as well as interpretation of the scholar studying the source. Dating methods rank as follows:

1. Direct Historical Dates.[100]
2. Astronomical Dating in a unique historical context.[101]
3. Dating based on historical reasoning. (close)
4. Tree ring dating. (science)
5. Calibrated C-14 dating. (legend)
6. Astronomical dating with a weak historical context.
7. Uncalibrated C-14 dating. (mythical level)

Tree ring chronologies are used to calibrate C-14. So we must beware of the pitfalls of tree dating. Where three ring chronologies are sandwiched by valid above and below historical dates at an archaeological site, then we can be reasonably confident in an item dated in the context. A radiocarbon date done on the tree rings in the sandwiched time frame then becomes a way of calibrating a radiocarbon correction for the period.

100 These are actual dates, day, month, year, or years taken from historical sources. The Scripture is at the top of the pile for the most ancient dates.

101 Astronomical dating must be restrained by strict historical limits, which includes correction for the long day. If the limits are too wide then the repetitive nature of astronomical events renders astronomical dating ambiguous.

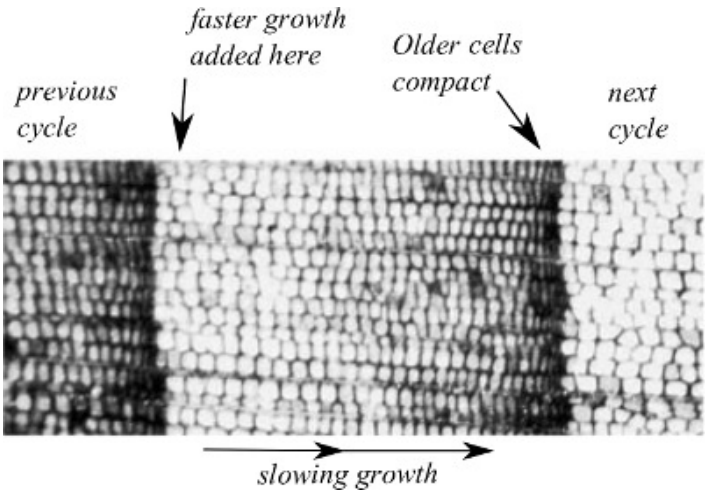
Tree Ring Chronologies

There are numerous tree ring chronologies. Most of them are valid and useful. However, the 8,700 year Bristlecone pine chronology is clearly in contradiction to the historical dates provided by the Scripture. The White Mountain pines are not the problem. The researchers and their worldviews are. Most claim that they have not witnessed a BC pine growing more than one ring per year. However, since this assumption is foundational to their worldview, they are not motivated to find out the truth in a scientifically responsible way that precludes their worldview from influencing the results.

Young BP pines can be induced to grow multiple growth rings per year by simulating two week droughts.[102] Old BP pines switch to strip growth when they get large enough that water or soil resources are not enough for volumetric growth. Adding a complete ring requires increased resources due to the larger volume of each new ring. Additional rings also lose water due to greater surface areas of each succeeding ring. Therefore, large areas of the larger trees die back, leaving a strip of growth on one side supplying water and nutrients to a few remaining branches. Since this one adaptive mechanism appears to be genetically programmed, we should be prepared for other mechanisms.

Normally, tree ring growth begins when water is abundant and temperatures are favorable. Larger cells form the lighter part of a ring first, and are adjacent to the dark ring of the previous growth cycle (Figure 42). This makes a nice dark to light contrast. As new inner large cells are added, the first layers of cells begin to compact, gradually forming a barrier to moisture loss. Here is a tree ring cross section (0.5mm/ring):

Figure 42



A cycle is determined by light, moisture, temperature, and soil nutrients. It is well known that these factors cause rings to either grow thin or thick. What is not so well known is that when a tree is deprived of the necessary conditions, the outer dark cells protect the tree. When conditions are right again, new growth starts a new ring with large cells forming next to the old dark cells. The harsher the conditions are, the more likely a ring is to be very narrow. If the cycle of conditions repeat more than once a year, then multiple narrow rings can grow in one year. The main limiting factor is water. Under the harshest conditions a tree may only be able to grow for two weeks before moisture runs low. In that case the dark part of the ring hardens to protect it. When the next rainstorm comes (or when the snow melts) a new ring is formed.

Normally, sub-annual rings are not so distinct, and dendrochronologists call them "false rings." The BC pine has few or no false rings. This is probably because the "false rings" look exactly like annual rings. Conditions are harsh enough between watering events that ring growth terminates in the typical annual fashion before a new one forms with the watering event.

Where do we look in history for a repeating cycle of good conditions and poor conditions on a sub-annual time frame sufficient for multiple ring growth? The time period is during the ice age, in areas not affected by the ice buildup, where the snow from each storm had time to melt. Monthly storms would bring harsh cold snowstorms to mid latitudes, arresting growth and causing ring termination. The skies would clear long enough for the snow to melt off. The trees would warm, and they would put on a growth ring inside of a month as the temperature regularly swung between just below freezing to 50-60 degrees. During each summer this cycle might repeat for two to four rings, but in the early fall things would really freeze over, until the next spring melted the accumulation, keeping the ice age at bay in the mid-latitudes.

These conditions might have lasted up to 700 years after the flood. It is possible that the trees even had a genetic response to short spurts of growth with lots of cold between. There could be anywhere from 1400 to 2800 rings during this 700 years, giving an apparent age of any tree starting after the flood an "age" of 5133 to 6533 years by AD 1950. It is possible that the oldest trees, some 4900 rings old, started growing two or three hundred years after the flood.[103] And the reason that researchers have no experience with multiple ring growth in BC pines, is that conditions for it are not right at present, added to the fact that they are not looking for it seriously enough. It could be that a genetic response to grow multiple thin rings is triggered when the growing season is sufficiently interrupted, causing the tree to alter its usual annual dormancy pattern. It might take several seasons deprived of a normal summer to trigger the genetic response.

The 8700 "year" tree ring chronology was not built from living BC pines. It was built by matching dead wood, with all the inherent statistical problems of matching. Besides the possibility of multiple ring growth, there is the possibility of other cyclical disturbances leaving a periodic signature in rings sufficient to override the seasonal basis for correlating dead wood sequences.[104] Tree growth is subject to cyclical factors from the start. We cannot assume we know about all the cyclical factors that can affect ring growth. There may be longer term cycles that we have not yet discovered which leave long term signatures in the rings. If the cyclical nature of such signatures are not grasped, then the possibility exists that signatures may be assumed to be unique, and then improperly used to draw out the chronology.

102 Lammerts, W.E., Are the Bristle-cone Pine trees really so old? *Creation Research Society Quarterly* **20**(2):108–115, 1983.

103 Material for this summary was taken from "Evidence for multiple ring growth per year in Bristlecone Pines," *Journal of Creation* **20**(3) : 95–103 December 2006, Mark Matthews.

104 See J. Woodmorappe, "Collapsing the Long Bristlecone Pine Tree Ring Chronologies" International Conference on Creationism, 2003.

When the control of Scripture is discarded, then the danger becomes almost certain that a false cycle or some other cycle will mislead the research. Such is the case with astronomy. Researchers who have discarded the long day did not just end up with no solutions. Huber and every other researcher who has looked for solar and lunar eclipses before the long day has been able to correlate them to an extent that are convincing to them, but not without serious discrepancies, as I have shown. A chaotic worldview does not predict cycles, and unknown cycles. A Scriptural position does. Dating that is not done by recording the cycles of the sun, moon, and stars, may be pulled off track by other cycles unknown to the searcher. Therefore, everything must be checked with the revealed history, and if it does not fit, then one must suspect our own ignorance or a false worldview as the culprit.

Other Radio-Isotope Dating Methods

Other creationists have done an excellent job of refuting evolutionary arguments for long ages, based on isotope decay. So I will summarize some points, and discuss others which are neglected. The use of the isochron method is supposed to overcome the problem of assuming how much decay product was present in the sample at its creation. In creation an element is typically found as a mixture of isotopes of the same element with fixed abundances. A radio-isotope typically only decays into one isotope of a daughter element. By measuring the daughter element's kindred isotopes, one can determine how much of the daughter element is not due to decay, since it normally occurs in fixed ratios with its other isotopes.

There are two problems. Firstly, how were the normal abundances determined? By breaking down the percentages of each element into their isotopes. What if those abundances were achieved by radioactive decay? The isochron method will then underestimate the total radioactive decay. Secondly, all the isochron method can do (neglecting the first point) is tell us what the total amount of radioactive decay is in a closed system.

What may cause a large amount of decay in the past? Everything from the weakening of certain constants, to large amounts of electricity surging through the earth at the time of the flood, has been proposed. The solution to this question is not imperative to addressing the evolutionist as there are sufficient contradictions in the datings obtained that they cannot justly claim an objective correlation that must be taken seriously. Fossils do not fall into neat assemblages, in neat layers of strata that present a neat series of decreasing radio-isotope "ages" going upwards to the surface, that match a supposed sequence of evolution. That is a myth that purveyors of evolution cause their students to believe, based partly on contrivance and partly on neglect of proper procedures. The illusion of evolutionary correlation to radiometric dating is an artifact of textbook propaganda.

The contradictions are: 1. discarded, creating a false sense of correlation by human selection. Any poor dating method is bound to give a researcher what he wants if he can pick what he wants from a random distribution of datings; 2. explained away by contamination, mixing, lack of a closed system; 3. explained away by geological manipulation: over thrusts, under thrusts, and the like. By the time the evolutionists are done with their excuses and unrestrained explanations, the only basis left for supposing them that remains is their evolutionary worldview, and contrived lies that have yet to be exposed for what they are.

Another part of the dating game is to choose isotopes that tend to give older ages vs. younger ages on the same material. Even the subconscious mind can influence choices to give results agreeing with one's worldview. Like the daily horoscope, predictions come true because the dabbler in astrology wants them to come true, and then rationalizes their fulfillment when the feeblest thing that can be analogized as a fulfillment comes along.

Ice Core Dating

Cores are drilled around 3,000 meters deep in Greenland, and the layers therein are claimed to represent 110,000-160,000. Similar cores are drilled into the Antarctic ice sheet, and these are believed to represent 800,000 years. These results are derived from pseudo-science disguised as science, which is augmented by the reinforcement syndrome based on evolutionary beliefs. Truthfully, there is little difference between what evolutionists do and what their priestly kin in Nippur did 4,000 years ago.

Ancient priests practiced the art of astrological divination with their pseudo-science observations of lunar eclipses and examinations of animal guts to learn the future. The eclipse shadow observations and gut examinations were what passed as scientific measurements in those days. It was the fig leaf to cover their naked speculations. They thought they knew how to interpret the evidence without the guidance of the Almighty.

Evolutionists are no different. They predict the past using their imaginations dressed up with whatever passes for science. Science is used to cover up the fact that they are simply speculating philosophers. It includes observation and a lot of mathematics that ordinary people don't understand. We are awed by the math and amazed at the instruments. But it is just a shell game. While our eyes are on the technology, the evolutionary priests are slipping their assumptions into their story unnoticed, unchallenged, and untested. The public then accepts their interpretations of the observations without question. The evolutionists do selective control experiments, but these are not to test the main hypothesis. They are to filter out which variation of the assumed hypothesis will tell the best story.

The light of biblical truth has forced the old divination into the shadows of our society, where it is justly called superstition by anyone with good scientific training. Now, however, the assault on the word of the Almighty has changed directions. It has mutated and taken a different form. It is now aimed at overthrowing the biblical revelation of past time and history. I have termed the new divination 'paleo-divination.' Paleo-divination is the interpretation of the past using pseudo-science to make it appear that the scripture's version of history is incorrect.

We will find that paleo-divination lacks a key ingredient to qualify as real science. It lacks control experiments to test the main hypothesis. It lacks confirming witnesses that can testify to the truth of their results. And where such tests are not possible, they assume their presupposed worldview is sufficient justification for replacing the Almighty's revelation on the matter with their presumptive knowledge.

One should not claim to know more than God unless they have logically and experimentally closed down all possibilities of being in error. Do they think themselves so clever in estimating the probability of a matter that the Almighty cannot engineer an improbability (from a materialistic perspective) into a reality? Whenever man's arrogance in knowing more than God gets out of hand, God does the improbable, and it stumps him. The beginning of wisdom is the fear of Yahweh. As long as what some men say is improbable remains logically possible, let us choose the improbable that agrees with His word, and wait upon Him to stump our enemies. That is the fear of Yahweh.

I should not have to remind the faithful that Elohim is in the business of doing the improbable. The flood was improbable. The Exodus was improbable. Joshua's long day was improbable. The virgin birth was improbable. Yahweh becoming a man in Messiah Yeshua was improbable. The scripture details a long history of the Almighty stepping in and doing the improbable where men would naturally assume that the plan of redemption would die.

Does man really know enough about physics and geology to say what is really probable and improbable? Is man's ability to calculate, extrapolate, and interpolate logically fool proof? Yahweh will make fools out of them yet.

Legitimate science combined with assumptions based on Scripture yields a completely different result than those claimed by ice core paleo-divinators. And we are entitled to depend on biblical truths as our starting assumptions. For they are delivered by Yahweh's word, and not by the speculations of men. Biblical presuppositions are revealed truth, and are not on the same level as the naturalistic presuppositions of the evolutionist. We therefore do not need to justify our assumptions by any other argument than the one that proves God exists, and that he meddles in everything for his redemptive purpose. The fool says their is no God. The fool says He has not chosen Israel to reveal his plan. When Israel stops listening to the fools God has not appointed, and returns to obeying Him, then Yahweh will make fools out of the other fools. That is the only clock that matters. When the right hand reaches the hour of obedience, then time is up, and justice will be done.

So the approach we will use here is to show that the evolutionists have left logical loose ends. They have left enough of them to spring Yahweh and his Word out of their traps.

To cause an ice age, one needs warmer seas, which produce more precipitation. To cause the dust found in the lower part of the ice core, one needs continental dust storms, sand storms, and and lots of volcanism. Warmer seas and greater snowfall and greater dust in the atmosphere create sub-annual cycles in ice layers a hundred fold that mimic annual cycles. Stronger winds layer and sort the snow and dust. Harder crusts form separating dust horizons. Evolutionists may think they are measuring annual cycles. However, they are measuring individual storms, and even layers of individual storms, and in the lowest layers they may not even be measuring that. They may be measuring the bumps in statistical (ECM) noise so that they can interpolate the results in agreement with other chronologies they assume are secure.

After the flood the seas were about 80º F according to Michael Oard, a creation scientist, who has done a great deal to expose ice core paleo-divination. Larry Vardiman, an atmospheric creation scientist, calculates anywhere from 80-120º F.[105] The resulting accumulation would be up to 3 meters of ice per year in central Greenland. In southern Greenland, for the last 50 years, it has snowed sufficiently to produce 5 feet of ice per year to bury the lost squadron, which is now under 265+ feet of ice. At that rate, the 10,000 feet of ice in Greenland would take only 2000 years to accumulate. Therefore, to be clear, the evolutionists have not proved it impossible for the present ice sheets to build up in the short time since the flood.

The evolutionists claim the ice layers were only 1-2 cm thick per year in the lower part of the cores. That means that every 3 meters of ice is inflated in age by 150:1 to 300:1. Just 10 meters of ice might make 500-1000 years! Whereas, in truth, it would be just 3-5 years. In the NGRIP core they between 2000 meters and 3000 meters they have about 80,000 years. The average ice layer would be about 1.25 cm. Between 0 and 1000 meters they have about 7000 years, or 14 cm/layer. Near the top it goes up to 25cm/layer. These thicknesses are pre-calculated based on current ice flow rates combined with the assumption that all present layers started at the current altitude.

Evolutionists assume that the ice sheet is a few million years old, and they assume that the top layers in the Greenland ice sheet move down to the bottom in about 250,000 years. They claim ability to measure 110,000-160,000 layers, and to do so assume the top layers have grown very thin by the time they settle near the bottom. Their expectation is based solely and only on their assumption that the ice sheet has been in place for a few million years, and that the bottom layers were formed by falling at the top and moving downward over 250,000 years to the bottom, growing thinner each year. But they have not proved another scenario impossible:

If we only start with an assumption that is permitted by Scripture, then the whole picture changes. Ice began to build up in thick layers of 3 meters each year after the flood. The ice sheet was built from the bottom upward. When the ice age ended about 700 years after the flood, then the accumulation slowed down to present rates. The thick layers did not get at the bottom by settling there from a top at its present day altitude. They accumulated when the sheet was much lower. Then the seas were warmer, and the snowfall much higher. As the sheet grew in height, the seas cooled, and precipitation decreased to present day levels.

Layers can be counted going downwards in the cores for perhaps 2000 years, but then the conditions of the cores change making counting subjective and uncertain, and at this point assumptions are relied on to identify what qualifies as an annual layer. At the top, to count layers, a series of depth hoar frost layers are used to signal the summer season. During the summer higher temperatures cause a hoar frost layer in the top layer of snow. This is covered up by the next storm, and a new hoar layer forms, and then another storm comes. Sometimes the wind sweeps a snow crust over the hoar layer preserving it instead of the next storm. When the winter comes hoar layers are not formed because it is too cold. The winter snow forms a thick layer or series of layers without the hoar layers. The annual signature is determined by locating the summer hoar layer(s) and the thicker denser winter layer(s) without the hoar. The hoar layers are less dense than the winter layers, and they have larger crystal sizes. These two factors enable layers to be counted, and to spot the winter layers in between. The very top layers are snow. After a few years it turns into firn, which is compressed snow.

At a depth of about 50-100 meters the firn layers, have completely turned into ice. The extra space that makes it possible to identify the summer hoar has simply turned into extra bubbles and ice that is very slightly less dense than the winter layer. By the time the core gets 900-1600 meters deep the crystals have

105 I presume he means that 120º could be a peak seasonal temperature in some shallow areas, and not the average temperature.

been completely squashed and their geometry altered. The bubbles are squashed, and each air molecule is locked in a matrix of water ice molecules forming an air hydrate. It is possible that at a point as shallow as 500 meters that hoar layers cannot be distinguished from less dense snow, and that more dense winter layers cannot be distinguished from dense summer snowfalls. This is because the geometry, size, and shape of the water molecules in the ice are continuously changing in unique ways different to their temperature, pressure, and rate of accumulation. Can the evolutionists infallibly say that the changed layers correspond to summer depth hoar and winter snow? Let's have them answer this question:

"Fundamentally, in counting any annual marker, we must ask…whether non-annual events could mimic…a year. For… any…annual indicator…, it is…certain…variability exists at the subseasonal or storm level. We certainly must entertain the possibility of misidentifying the deposit of a large storm…as an entire year."[106] So it is possible that conditions can exist by which the evolutionist's correlation of layers to years is incorrect! And there you have it. What men admit is possible, though they think improbable because of their world view, becomes certain when God and his Word speaks. Alley, et al. consider miscounting to be a small percent of the total. However, if conditions can exist that cause them to count one sub-annual event as a year, then the conditions can be repeated. How do they know that such conditions were not repeated? The Scripture proves they were.

It is possible that a very large storm occurs during the summer forming thick layer(s) that look like the complex winter layer(s).[107] Since the large storm does not form hoar until a lot of snow has piled up, the layer looks like an intervening season. The error introduced into counting layers is proportional to the number of unexpectedly large storms during the summer that mimic the winter season.

If it is during the winter, then one storm track may lead directly from a northerly sea region depleted in 0^{18}, and may drop a dense well packed snow layer. Then another storm track will come up from the gulf region and go overland dropping a light and cold snow that traps a lot of air in the layer, and thus leads to less dense ice, or ice with more air mixed in it. Several storm tracks might drop their loads from customarily different altitudes, where they are depleted in varying degrees of their 0^{18}. 0^{18} also diffuses and migrates in the firn and ice. It also sorted by gravitational fractioning.

Probably the oldest date for which ice cores can be cross dated is the eruption of Mt. Vesuvius in AD 79.[108] It may be that they simply matched the closest of the many Vesuvius eruptions that conveniently agreed with their assumed counting.

While it has been thought that the Santorini eruption is dated in the ice cores, the glass ash shards found with the acid spike do not carry the chemical signature of Santorini, and even if it did, it would not prove it. It might only show that two volcanoes can spew out the same chemicals. It is possible, then, that a different climate prevailed over Greenland even in the 1600's B.C. If warmer seas brought large snowstorms to Greenland for 900 years after the flood with winter warm air masses sufficient to cause depth hoar after each storm (or interspersed with lighter snows from an alternating storm track during the winter) at a rate of two per week, then 93,600 layers could be formed. We really don't have to explain that many layers as the evolutionists counting procedures were invalidly determined by their preconceived notions of how many layers their world view tells them they must have.

The lowest ice core layers are counted by counting dust layers. This method is considered more reliable, but for what reason? The reason is that all the other methods begin to fail in the deeper part of the core. This is a highly subjective process derived from evolutionary assumptions. The lowest layers are assumed to be very thin, and they are counted via dust layers by setting a laser beam size that is narrow enough to pick out the peaks and valleys of dust particle variations. The choice of which part of the statistical noise from the dust variations to count is determined by the assumption of how thick an expected annual layer will be. The layers are expected to be very thin because an assumption of great age is built into the ice flow theories of evolutionists. However, if the snowfall was greater during a 700 year ice age, along with increased dust (from volcanoes and dust storms) then any number of dust layers could be possible. I would say as many as needed to meet the needs of the subjective evolutionists. However, such layers would not represent years.

Cloudy layers of dust from the Wisconsin part of the ice age are supposed to indicate summer. However, if snowfall was greater than evolutionary expectations, and dust came with every storm from a continental storm track, and just less from an oceanic storm track, then it could vary with every other storm! There are also fractioning processes by which dust can be sorted and concentrated between ice of varying density. The evolutionist has no infallible way to count. Conditions may be such that they can over count. They may think counting wrongly is improbable in their world view. But once we turn to God's word and find out how old it really is, then it is certain that they miscounted.

When the ups and downs of dust concentration are measured, then if one turns up the resolution, and looks closer, then several smaller ups and downs can be counted on just one up and down cycle obtained at a lower resolution. The counting is no different from counting random variations. The number counted depends only on the ability of the counter to pick out up and down bumps in the data. The resolution at which to count is determined by how thick the evolutionists assume the ice layer must be, which depends on how hold he assumes the ice sheet must be. The result is paleo-divination.

Another method of counting layers counts variations in oxygen isotopes that correlate to winter and summer temperatures. This is good for a few thousand years, but what if the climate was different 3000 years ago? If the seas were warmer and snow dropped from varying altitudes, then every other storm would bring isotope variations that mimic the current annual cycle, or worse yet, are stronger than the annual cycle, and completely

106 Quoted in Oard, *The Frozen Record*, pg. 71-72 < Alley, R.B. et al., Visual-Stratigraphic Dating of the GISP2 Ice Core: Basis, reproducibility, and application. *Journal of Geophysical Research*, Volume **102**, Number C12, Pages 26, 367–26, 381, 1997a.

107 The wind can form layers in a single storm.

108 *A Synchronized dating of three Greenland ice cores throughout the Holocene*, B.M. Vinther, Nov. 2005. The Santorini dating has recently been overturned by finding many more volcanic spikes in the cores. Since Santorini tephera has not been matched in the core, it cannot be dated that way, and if Santorini had a continued eruption history all bets are off. Even the Vesuvius dating can be overturned if the tephera is found to be non-unique, or if the glass shards are from a more recent eruption. Vesuvius last erupted in 1944. It erupted in 1822, 1631, and 472. If the wind is right a small eruption can place glass in Greenland, or if wrong can cause a large eruption to totally bypass it.

mask it. The same set of storms already proposed above could bring 93,600 cycles in the isotope levels with them. Evolutionists say that the sub-annual storm signature is erased. This is because they assume that layers are no greater than 20 cm. But what if they are 50 cm or 2 meters? In that case the sub-annual variations will be preserved and will look like annual layers.[109] If the temperature gradient between summer and winter was much less, as creationists propose, then the 0^{18} signal would peter out much quicker due to diffusion. And under other conditions it might concentrate in unexpected patterns.

Another method used is electrical conductivity measurements, ECM. It is thought that different seasons show different levels of acidity. This may be, but how is it sorted out from sub-annual variations? Acids love to migrate and concentrate. In the end the method is just as subjective as counting dust layers. It all depends on how many years one needs to count to meet the requirements of other evolutionists and ultimately the astronomical theory of ice ages. There is no control by which to check the validity of measurements. The result is no better than the predictions of priests prognosticating the future based on which quarter of the moon is covered by an eclipse shadow first.

The ability to count hoar frost and density changes in the ice and bubble concentrations disappears after about 1000 meters.[110] It fails thereafter as a chronometer. The ability to count 0^{18} variations ceases due to diffusion and the masking of the signal by greater snowfalls of more frequent storms dropping snow from different altitudes during the ice age. The counting of dust layers is only good when the dust variation is seasonal. If dust storms and volcanoes were the norm during the ice age, then this chronometer breaks. The counting of acid layers has to be calibrated by all the other methods, and where such methods are not possible, then by assumptions.

The LLS method of measuring is called laser light scattering. At first it was used on sections of ice that were melted. Then it was used on solid ice. It is used to determine the relative concentration of dust and bubbles in the ice, and thus density and seasonal dust (as assumed). The 0^{18} method determines the changing ratio of the oxygen isotopes, which are caused by temperature changes, the altitude of the storm, and the distance the storm traveled. Even a land track vs. a sea track results in different levels. ECM, electrical conductivity, measures the acid level in a section of ice, which constantly varies. Like dust layers, the interpretation is subjective. Assuming the present climate, these signals give stronger annual cycles. Using a different climate as proposed by Creationists changes the whole outcome.

Finally, ice core paleo-divination depends to a great deal on cross dating from other paleo-divination dating efforts: deep sea cores, Milankovitch cycles, other ice cores, and fixed points in evolutionary climate models. If something does not fit, then the evolutionists reexamine the non-compliant data, and if necessary they interpolate it so the fixed points come out the way they wish.

The evolutionists believe that they have checkmated God with their ice core story. But it would not be the first time that the Almighty allowed it to look like he'd been checkmated. For the faithful He love to rescue the helpless and turn the tables. Faithless men thought that the promise of the Messiah failed when the last king of Judah died childless without an heir. But his widow married a relative and the line continued according to His law. The disciples thought they were defeated when Messiah died, but then the unlikely happened. He rose again. Indeed, Yahweh is Lord of the unlikely. He allows men in their arrogance to presume they know better for a season, and then in the end he does the unlikely and makes fools out of them all.

Inconsistencies in the evolutionary version of history are not easy to find in their stories. They have spent billions of dollars and millions of man hours telling their story, and making sure their mutual stories are in tune. Every now and then then are caught off guard, or some anomaly exists that points the finger at them. One case is when a WWII aircraft was recovered from a glacier in Greenland where it had been buried in over 250 feet of ice in about 50 years. That shows that 5 feet of ice per year is not unreasonable. The ocean temperature is around 40º F. What if the ocean was 80º F 4000 years ago? The salvager said that he had seen 100's of layers in the ice, which were from individual storms, or warm and cold spells. What if so many storms change the physics of ice layers?

I can suggest an experiment that might expose the whole charade. Take 10 samples 0.5 meter long from a section of core where the flow model says the layer thickness changes measurably from sample to sample. Tag the samples. Scramble them, and subject them to LLS, ECM, and 0^{18} measurements along with whatever subjective visual conclusions the experimenter wishes, and see if the right number of annual layers are counted at the right thickness. The experimenter should have no knowledge of what is the expected layer thickness, but should be qualified to count layers, but not so familiar with the data that he knows where the core sections came from. Then let us see if he can determine the layer thickness by physical inspection and measurement alone, and if he can get the cores in the right order.

The above has been tried in a way that suggests the above experiment will fail. "The fact that cycles can be found to prove preconceived expectations was dramatically shown again when Meese et al. (1993, 1994) at first dated the 2,800-meter level of the GISP2 core at 85,000 years BP by visual stratigraphy. However this date disagreed with the timescale based on deep-sea cores..., so the layer between 2,300 and 2,800 meters was 're-measured' by a finer-resolution laster beam of 1 mm thickness instead of 8 mm thickness as before (Meese et al., 1997, pp. 26, 417-26, 419). They found 25,000 more years in this layer, so that the 2,800-meter level was dated at 110,000 years BP, just as expected from the chronology of deep sea cores!"[111] Uh huh, if the machine does not work, kick it until it gives the right results. For every case that this is exposed, there are a hundred more where the discrepancy was covered up, and what they did to remove it was swept under the rug. That's why it is paleo-divination.

Do not be awe struck by their computers, and charts, and graphs, or by the drilling machines, or the billion dollar government approved budgets. These are merely the things they have prostrated to the idol of evolution. Neither be swayed by their large numbers, nor their earthly glory. Yahweh will ruin them in his good timing. He will take their wealth away. He will take away their management of His creation. And he will turn it all over to the faithful who trust him and believe his word.

109 *The Frozen Record*, Micahel Oard, pg. 64.

110 Or more conservatively, the ability to interpret the meaning of the density changes as annual becomes non-objective. And I may be being too generous here.

111 Oard, *Frozen Record*, pg. 74.

Seven Years Conquering The Canaanites

The conquest itself was seven years **1** … **7**. Operations lasted ½ year before crossing the Jordan, and **6** ½ years afterward. The invasion of the Trans-Jordan Amorite kingdoms began in the fall of **2547**. The liberation of Trans-Jordan took place in the second half of the **40**th year from the Exodus. It is at this point that the spring *age based eras* are replaced by fall *sacred-year eras*. This transition takes place because the official counting of the Jubilee cycle was soon introduced. The sacred sabbatical years contained therein are always commenced on the 1st day of the seventh month.

The length of the conquest is derived from several internal facts. First, the time from the rebellion at Kadesh to the commencement of the Trans-Jordan conquest is **38** years (Deut. 2:14). Caleb tells us his age at the end of the conquest is **85** (Joshua 14:10), and that it was the **45**th year from the time that God promised him he would live for his faithfulness when the 10 spies gave an evil report. The commencement of Caleb's counting is the same as the counting in Deut. 2:14, so **45** — **38** = **7**. The conquest was seven years.[112]

Conquering Heshbon And Jepthah's 300 Years

Six months before the entry into the land, in the fall of **2547**, Israel conquered the Trans-Jordan territory, including the town of Heshbon. The capture of this city begins an important era, which is reckoned on a Tishri basis. The years of the Heshbon era are parallel to the sabbatical periods. Judges 11:26 tells us that **300** years passed before the Ammonites reconquered the city. The **299**th, **300** th or **305**th year was **2847**, equal to the **23**rd year of Tola. The solution adopted here is **300**th = **23**rd Tola.[113] Then Jair ruled for **22** years. When he died the Ammonites retook Heshbon. These **22** years were **2847** to **2869**. When Jair died, the Ammonites overran the Trans-Jordan and crossed over the Jordan and made forays into Israel proper on the west side of the river for **18** years. Jepthah refers to Israel's holding Heshbon for **300** years in Judges 11:26. This is a round number tossed out in the course of diplomacy. The actual figure was 321, 322, or 327 years, depending on which of three solutions is adopted.[113] The middle solution is adopted here. One of the other two could well be the right answer. Here is the math for the middle solution:

Conquest	+7	Given
Elders	+x	Judges 3:11
Chushan	+8	Judges 3:8
Othniel	+40	Judges 3:11
Eglon	+18	Judges 3:14
Ehud	+80	Judges 3:30
Jabin	+20	Judges 4:3
Deborah	+40	Judges 5:31
Midian	+7	Judges 6:1
Gideon	+40	Judges 8:28
Abimelech	+3	Judges 9:22
Tola	+23	Judges 10:2
	=286+x=300	

Then x = 14.

The sum of the component eras from the conquest of Heshbon to the end of Tola's **23** years is **286** + χ = **300**, where χ represents the years between the end of the conquest (**2554**) and the first oppression by Chushan-Rishathaim. If Jair's **22** years are included the equation would be **286** + **22** + χ = **300**, with solution χ = **–8.** Since χ < **0**, clearly this is impossible. So Jair's **22** years are not included[114], and the **300** years ends with the death of Tola, with solution χ = **14** for the elders period. This is a perfectly reasonable solution since it results in the oldest Israelites to remember Sinai at age **19** living to an age of **77** in **2567**; it was only after the death of this generation that Israel rebelled. If the average lifespan was **70**, then this leaves **7** years to spare for the younger generation that did not remember the Exodus to rebel.

The Days of Joshua

Joshua lived **110** years, dying in the **14** year period between the conquest and the first oppression. Allowing that he could have died at any point in this period would make Joshua anywhere from **50** to **63** years old at the Exodus. It is likely that he was at the lower end of this range, say **53**-**55**, at the time of the Exodus. The normal age of retirement from military service was **51**. However, the age for professional generals was **50**-**60**, who would no doubt serve longer in the national interest, so that their experience was not lost. Joshua is said to be a *young man* in the King James Version (Exodus 33:11). However, the Hebrew word נַעַר (*na'ar*) in this context, only means *servant* or *retainer.* [115] Clearly, Joshua had pledged himself to be Moses' aide. At the division of the land in **2554**, Joshua is said to be "old and stricken in years" (Joshua 13:1). He would have been **97**, at the least, with a probable age of **99**. It is likely that he had some years of age remaining at the division of the land as indicated in Joshua 23:1-2, and the comment that some of the elders, who had seen the works of YHWH, had outlived him, places the date of his death a few years before the first oppression.

---

112 Josephus puts the conquest at **5** years: *Antiquities,* V, 1, 19 & 23. This is no doubt because of the simple calculation of **45 – 40 = 5**, that does not reckon that Caleb is referring to the rebellion at Kadesh for the beginning point of his **45** year calculation. As Caleb was **85** at the division of the land, we see that he was **85 – 45 = 40** years old when the rebellion took place. He had just completed year **78** upon entry into Canaan. It appears that Caleb lived to about **98**.

113 There are three possible solutions. They affect only the Judges sub-chronology. See Appendix II: Fine-Tuning the Judges for a detailed explanation.

114 This is to say, not included in the 300 years. Jepthah's 300 year figure is rounded down from 322 years in this solution. The Ammonite reconquest was still after Jair died.

115 See the BDB Hebrew Lexicon (22), definition #2, **servant**, **retainer**. While the word *young* in Exodus 33:11 is a mistranslation, the Hebrew does not have the word *man* with it at all. The two words together, *young man,* in English, may connote immaturity; however, a gray haired elder might say someone was *still young* and mean anyone strong and vigorous, who just happened to be younger. Moses needed assistance at age 80 to hold his arms up for an extended period. Joshua was young enough to help him in this task.

The first servitude after the 14 years of the elders was to Chushan-Rishathaim, and it lasted 8 years, from *anno* 2568 to *anno* 2576. In this 8 years of idolatry and sin, there were two sabbatical years that Israel did not observe: 21, 28, which are added up 1 and 2 (column F1). The oppressor was, with little doubt Burna-Buriyåš I. He was from the Kassite line of kings that occupied Babylon after the Hittite king Mursili I sacked it around 1588 B.C. The term Kassite is equivalent to Chushan, and rishat transcribes from buriash. The dual ending is probably related to naharaim (two rivers). Burna-Buriyåš concluded a treaty with Puzur-Aššur III of Assyria, then a small vassal to the Mitanni, taking an oath to delineate the border between their kingdoms. The *Synchronistic Kinglist* names one Burna-Buriyåš as the 10th Kassite ruler and a contemporary of Išme-Dagan II, who is separated from Puzur-Aššur III by 42 regnal years.[116] It may be concluded from this that Burna-Buriyåš was the king of Mesopotamia at the same time the oppression of Israel occurred. The Kassites were at this time at the height of their power, and soon after they also invaded south Mesopotamia.

Israel was delivered by Othniel son of Kenaz, who gave rest to Israel for 40 years.[117] (It is impossible that the 8 years of servitude were included in the 40 years, since the land was not given rest during the servitude.)[118]

After Othniel died, Israel did evil again in the sight of Yahweh. So he sold them into the hand of Eglon, king of Moab for 18 years. The children of Israel cried out to Yahweh, who raised up Ehud. Ehud slew Eglon, and delivered Israel. He gave them rest for 80 years.

During the 18 years serving Moab (2616 – 2634) instead of Yahweh, Israel racked up an additional 3 sabbatical years, which they did not observe, 3, 4, and 5. And the years that Israel sinned where added up to the sum of 26 years.

After Ehud died, Israel sinned yet again, so Yahweh sold them into the hand of Jabin, king of Canaan for 20 years (2714 – 2734). Following Jabin's oppression, the land had rest for 40 years under the judgeship of Deborah. During Jabin's oppression Israel did not observe the sabbath years (6, 7, and 8) and the years of sin accrued to the sum of 46.

After the 40 years of Deborah, Israel did evil again, and so Yahweh sold them into the hand of Midian for 7 years. During this seven years, there was only one sabbath year (9), which Israel did not observe, and Israel's sin reached the total of 53 years.

When Israel cried to Yahweh, he gave them Gideon, who delivered Israel and gave the land rest for 40 years. After Gideon died, Israel was oppressed for 3 years by Abimelech. After Abimelech died, Tola Judged Israel for 23 years. Then Jair successfully resisted the Ammonites in his district for 22 years until his death. Upon his death, the Ammonites conquered his district also, and harassed the Israelites on the west side of the Jordan river for 18 years.

Jephthah judged Israel for 6 years and Ibzan for 7. Elon judged 10 years and Abdon 8. Following this, Israel was sold to the Philistines for 40 years. While there was a small break away from the sea peoples in Canaan from the days of Abraham, their main invasion just before the time they took over Israel for 40 years. Sometime around 1223 they destroyed Ugarit and the other coastal cities, and then they invaded Israel and brought them under their yoke in 1222 B.C.

Samson lived during the days of the Philistines, and upon his death Israel was delivered. After Samson destroyed the Philistine temple, they wisely decided to leave Israel alone. On the other hand they were in the midst of planning an invasion of Egypt along with the other sea peoples. In the 8th year of Ramses III they invaded Egypt, but were utterly defeated in the attempt. The power of the sea peoples was broken, and Israel was given a space of 40 years free of their oppression. The leadership of Israel then ended up in the hands of the High Priest Eli, who did not have to fight a battle to subdue the Philistines to stay in power. Their defeat by Egypt prevented them from invading.

Eli judged Israel for 40 years until his death when the ark of God was captured by the Philistines, who by this time had recovered somewhat from their Egyptian defeat under Ramses III, at least enough to cause trouble for Israel. The first year of Eli was 2958, and corresponded to **1181 B.C.** This is the exact year that Willis Beecher gives for the 1st year of Eli.[119] This represents the best results that 19th century scholarship was able to produce. It was not exceeded in the 20th century. In fact, mid 20th century skepticism saw to it that the work of the previous generation was forgotten.[120]

The death of Eli in year 2998 is followed by a second Philis-

116 "Burnaburiash I" Wikipedia.

117 Complaints voiced about the regularity of the occurrence of eras of **20**, **40**, **80**, or **120** are made to cast doubt on the naturalness of such numbers and hence the integrity of the bible. Such skepticism, however, fails to take into account that God was actively managing the time that Israel spent in either years of rest or servitude. His oversight of the outcome is quite evident when the enumeration of the **390** years of sin is taken into account with the **480** *anno Dei* years.

118 Many chronologists try to shorten the period of the judges by making the servitudes run concurrently with the early years of each judgeship. However, the Scripture forbids this by repeating, "The land had rest χ years" (Judges 3:11, 3:30, 5:31, 8:28), or by indicating that the deliverer rose up at the end of the servitude (Gideon, Tola, Jephthah). This is sufficient to show that there is no "rule" that oppressions should be the first part of judgeships. So neither should Eli or Samuel's terms run concurrently with the Philistines. The result of such tampering with the plain sense of the text makes the chronology unsolvable for those so entrapped.

119 Beecher 14, *Dated Events of the Old Testament*, pg. 107 (**A.D. 1907**). Before this date, Beecher's chronology goes off track. The **40** year Philistine oppression should be placed immediately before Eli, but Beecher needs to eliminate a sufficient number of servitudes from the Judges to shorten the period from the Exodus to Solomon's 4th year to **480** years.

120 The NASB Study Bible 1999, 1 Samuel 4:18 (cf. pg. 363 & Chronology chart inside front cover) claims that Eli should overlap Jephthah, Ibzan, Elon, Abdon, and Samson., and places Jephthah in **1078 B.C.** This places Eli **102** years out of place, and Jephthah **175** years out of place. This is the result of modern scholarship, and it makes a mockery out of biblical texts like Acts 13:20, and is built on the assumption that God never intended anyone to figure out the chronology of the bible.

tine oppression that lasted 20 years. By the time of Samuel the prophet, Israel has added up 134 years of sin, and 22 sabbatical years which were not observed. The total number of years from the first oppression until Samuel is 450 .

The 450 Years of Acts 13:20

The Scripture does not directly state how long the period between the conquest and the first oppression was. However, we have computed it using the 300 years of Judges 11:26. If χ represents this time, then the solution is χ = 14 years; after this we enter the time of the oppressions and judges. The table below shows all the relevant figures between unstated Elders' Period (χ = 14 years) and Samuel.[121]

Chushan	8	Judges 3:8
Othniel	+40	Judges 3:11
Eglon	+18	Judges 3:14
Ehud	+80	Judges 3:30
Jabin	+20	Judges 4:3
Deborah	+40	Judges 5:31
Midian	+7	Judges 6:1
Gideon	+40	Judges 8:28
Abimelech	+3	Judges 9:22
Tola	+23	Judges 10:2
Jair	+22	Judges 10:3
Ammon	+18	Judges 10:8
Jephthah	+6	Judges 12:7
Ibzan	+7	Judges 12:8
Elon	+10	Judges 12:11
Abdon	+8	Jud 12:13-14
Philistines I	+40	Judges 13:1
Eli	+40	1st Sam. 4:18
Philistines II	+20	1st Sam. 7:2
Total	=450	Acts 13:20

Like the Elders' Period, Samuel's years are unstated. Sigma (σ) will be used to represent the unknown number of Samuel's years. Between χ and σ lie exactly 450 years. This list of era's explains the 450 years found in Acts 13:19-20. The text says, "And when he had destroyed seven nations in the land of Canaan, he divided their land to them by lot"; this covers the seven years of conquest up to the division of the land. This is the beginning point of the era. The reason Acts 13:20 says, "about 450 years until Samuel" is the unknown χ = 14 of the Elders' Period. The about represents the uncertainty of χ, not because it was incalculable, but because its knowledge required an equation (286 + χ = 300) and not just a mere summing of figures. This was solved above already.

This chronology is easy to understand until Samuel. Samuel's first year comes in 3018. To find the length of his judgeship another calculation must be done, which I will come to presently. Many chronologists have omitted the 20 years in 1st Samuel 7:2. This period begins with the defeat of Israel and the death of Eli, and ends with the defeat of the Philistines in 1st Samuel 7:13. 1st Samuel 7:3-4 shows that the period is to be regarded as a rebellion of Israel and a time of servitude to the Philistines. The period is necessary to complete the 390 years of Israel's sin.

Calculating Samuel's Years

We already discovered χ = 14. Finding σ for Samuel's years requires a proper understanding of the reference in 1st Kings 6:1 to the 480th year. The key is that the phrase *for the going of the sons of Israel from the land of Egypt* is a reference to the annual Passover. The Passover was regarded as Israel's independence day celebration, and a re-enactment of the Exodus, and so it became customary to count the number of official Passovers. The text says, "And it came to pass in the four hundred and eightieth year for the going-out of the children of Israel from the land of Egypt, in the fourth year of Solomon's reign over Israel, in the month Zif, which *is* the second month, that he began to build the house of Yahweh" (1 Kings 6:1, my translation). The Hebrew text does not say "The 480th year *after*". The verb לְצֵאת means *for going*. The verb is used in Exodus 13:3 for the *Exodus*. The sense is "the 480th year *for* going-out." This usage is parallel to "the 231st year *for* Independence" with reference to the United States. The 480th year does not mean it was ***480*** years *after* the Exodus. The language uses an ordinal number and a preposition, לְ, which is more ambiguous, meaning *pertaining to, for, with regard to*. What is being measured by the 480th year is the number of celebrations of Exodus or national independence.

Accordingly, if the national independence is interrupted by subservience to another nation, then the national celebration would have to be suspended until independence was recovered. The phrase *going-out* had double reference. It did not just refer to the original event. It also referred to the annual celebrations of the original event. It is similar to the American English usage of the words *Independence Day*. In the original sense, this meant July **4, 1776**. However, most often it is used to refer to the celebration day of this event. If national independence is interrupted, then the enumeration of the number of independence days would have to be interrupted until independence was restored.

In ancient times nations were much more likely to loose their independence for a period and then regain it later. In such cases, an era enumerating independence celebration would be suspended, and then pick up where it left off when sovereignty was recovered.

Therefore, 1st Kings 6:1 does not count the years during which Israel was enslaved to other nations. The 134 years of oppressions, therefore, are to be omitted from the total. The number of Passover celebrations is 40 + 7 + 14 + 40 + 80 + 40 + 40 + 23 + 22 + 6 + 7 + 10 + 8 + 40 + s + 40 + 40 + 4 = **480. 461 + σ = 480,** and σ = 19. On the other hand if the 134 years of oppressions are included, then **σ = 19 − 134 = −115 < 0.**

Clearly Samuel cannot judge for -115 years. Since the actual number of years is already >> 480, the validity of the interpretation and calculation is **confirmed.** The first witness is that the time is already much greater than **480** (Total >> **480**). The second is that the period of the Judges cannot be sufficiently shortened without doing violence to the texts. So the **480** years is a cipher for the number of Passovers. As 134 years of servitude are to be omitted, the **480th** Passover comes to the **4th** year of Solomon.

The sum of the Passovers derives from the following components:

121 The length of Shamgar's Judgeship is not stated because it was contained in the 3rd Servitude under Jabin: Judges 3:31; 5: 6-7. The Scripture also says that Samson's **20** years took place during the days of the Philistine Oppression (Judges 15:20).

Exodus	1	Exodus 12
Sinai, 2nd yr	+1	Numbers 9
Wandering	+38[122]	Deut. 2:14
Conquest	+7	Joshua 14:10[123]
Elders	+14	Judges 11:26*
Othniel	+40	Judges 3:11
Ehud	+80	Judges 3:30
Deborah	+40	Judges 5:31
Gideon	+40	Judges 8:28
Tola	+23	Judges 10:2
Jair	+22	Judges 10:3
Jephthah	+6	Judges 12:7
Ibzan	+7	Judges 12:8
Elon	+10	Judges 12:11
Abdon	+8	Judges 12:13-14
Eli	+40	1Sam. 4:18
Samuel	+19	1Kings 6:1*
Saul	+40	Acts 13:21
David	+40	1Chron. 29:27
Solomon	+4	1Kings 6:1
Total	=480	

The count of the Passover years is 480. When the **134** years of servitude to other gods are included, the total is 614 years in actual time. The passover years are individually numbered in column H2-H4, with a red line aligned to the Passover in column H4.

The Jubilee of Saul's Second Year

The accuracy of this calculation is also confirmed by the Jubilee cycle. After adding Samuel's years (σ = **19**), the first year of Saul in the second half will be **3038**. Divide by seven to see if this year is sabbatic: **3038 ÷ 7 = 434**. Seven divides evenly **434** times. So the first year of Saul is sabbatical: **49**. Is the next year a Jubilee? Divide by **49: 3038 ÷ 49 = 62. 49** divides evenly **62** times; therefore, the year **3038** is a Jubilee in the second half: **1/50**.

Is there any confirmation that Saul's **2nd** year was a Jubilee? Yes. First Samuel 13:1-3 refers to Saul being *son of a year in his reigning, yea, two years he hath reigned over Israel* (Young's Literal Translation). This chronological notation introduces the occasion "and Saul hath blown with a trumpet through all the land" (vs.3) that alludes to the legislation for the Jubilee, "ye make the trumpet sound throughout all your land" (KJV, Leviticus 25:9). It should be kept in mind that there were no chapter and verse numbers in the bible in those days. The normal method back then for referencing a text was to quote a choice phrase from the text. For example, the books of the Torah are named from words that occur in the first verse of the book. Also, as literature was extremely limited, and the Torah was regularly read, everyone knew what you were talking about when a text was referred to.[124]

This Jubilee synchronizes with the entry into the land. Israel entered the land in **2548**, and Saul blew the trumpet in **3038**. The difference, **3038 – 2548 = 490**, is **490** years, and **490 ÷ 49 = 10**. Therefore, from the entry into the land, to Saul's Jubilee, is exactly **10** Jubilees or **490** years.

The Jubilee is the third witness. The fourth witness to the validity of the suspended era principle is found with the **390** years in Ezekiel 4:5. These **390** years pertain to Israel, and not to Judah. For there is a separate figure given for Judah, **40** years. The only way to obtain these years is the sum up all the discontinuous time segments of Israel's servitudes and rebellious kings. Take the **134** years omitted from **480** year Era of Independence, and add to them the **256** years that the northern kingdom rebelled against God and served idols. The result is **390** years. The tables below gives the results:

All Israel:		Judah alone:	
Chushan	8	Manasseh	25
Eglon	+18	Amon	+2
Jabin	+20	Jehoahaz	+1
Midian	+7	Jehoiakim	+11
Abimelech	+3	Jehoiachin	+1
Ammon	+18	Total	=40
Philistines I	+40		
Philistines II	+20		
Israel	+256	(See 256 Year Sum)	
Total	=390		

The fifth witness to the principle of the discontinuous era is found with the **40** years of Judah's rebellion. Twenty-four of these take place in the first part of Manasseh's reign, and then he was carried off by the king of Assyria, only to be restored to his throne after he repented of his sins. The remaining years are to be found in the remaining kings of Judah, omitting the years of Josiah, who was counted as righteous (Table Judah Alone).

Divided Kingdom 256 Year Sum

King	reign	Adjusted
Jeroboam I	22	20
Nadab	2	+1
Baasha	24	+23
Elah	2	+1
Zimri	7 days	+0
Omri	12	+11
Ahab	22	+21
Ahaziah	2	+1
Jehoram	12	+11
Jehu	28	+27
Jehoahaz	17	+16.5
Jehoash	16	+15
Jeroboam II	41	+41
Interregnum I	22.5	+22.5
Zachariah	0.5	+0.5
Shallum	1 month	+0
Menahem	10	+11
Pekahiah	2	+2
Pekah	20	+20
Interregnum II	8	+8
Hoshea	3.5	+3.5
		=256

The 390 years of sin continue in the Northern Kingdom after Judah and and the ten tribes split. Rehoboam ruled over Judah, and Jeroboam ruled over Israel. Israel walked in the way of Yahweh for 3 years:

The years of sin begin anew in the 3rd year of Jeroboam I (2 Chron. 11:17), where part of the third year is counted as walking

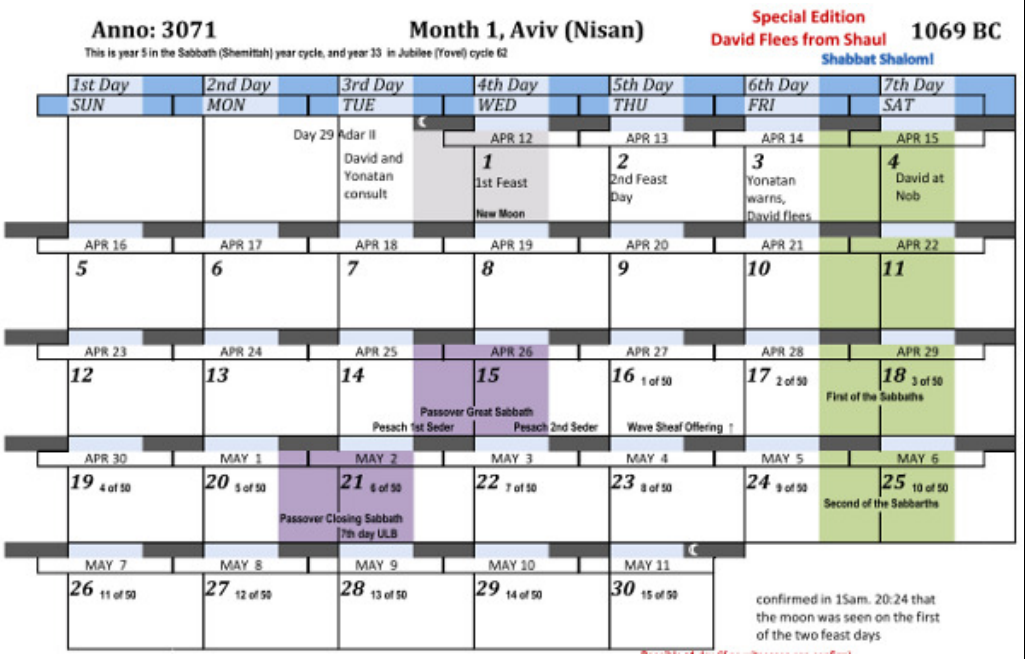
122 I could have used the 40 year figure for the first three entries.
123 This figure and the following (*) are computed on the basis of these texts. See forgoing dissertation.
124 On the other hand, the biblical method is to speak in parables, which are easy to understand by those in touch with the word of God, but easy to conceal from those out of touch with the word.

with Yahweh, and part of the year is counted in sin.[125]

They end after 3 ½ years of Hoshea's reign, since the northern kingdom attended Hezekiah's Passover with the king's acquiescence in that year.[126] The adjustments are cases of inclusive counting, i.e. where two kings both counted the same year. Therefore, the time has to be adjusted downward one year at each joining. The interregnums are documented by synchronisms with Judah.

The kings of Israel dated their reigns using a solar year beginning at the spring equinox. The kings of Judah dated their reigns beginning at Tishri 1. The synchronisms uniquely demonstrate this, for example, Nadab reigned in year 2 of Asa for 2 years (1Kings 15:25). Baasha reigned in year 3 of Asa for 24 years (1Kings 15:28, 33). It would be impossible to construct the chronology by using whole years, because the sum of sin years would rise above 390. The kings of Israel may contribute no more than 256 years during the divided kingdom. Therefore, the two years of Nadab are part of Asa year 2 and part of Asa year 3. This is called inclusive counting. The reader may inspect the charts for the other cases of inclusive counting.

Figure 43: David's Flight From Saul



Yahweh to set hot bread on the day of its being taken" (1Sam. 21:7).

David was on the run for at least 4-5 years, and not more than 7. Between 1057 B.C. and 1075 B.C. there are only two years that work out: 1066 B.C. and 1069 B.C. 1069 B.C. is surely the right year, since the lower date shortens David's life as a fugitive too much. David was therefore a fugitive for seven years. Willis J. Beecher picked 1068 B.C. in AD 1907, which is remarkably close for one who did not calculate the calendar for 1Sam. 20-21. The synchronism shows the seven day week, and the Sabbath on the seventh day, fall in an unbroken series since the time of David. It also confirms that the new moon was sighted, and that the dark moon (conjunction) was not used as the first day of the month.

Astronomical Synchronism: David Flees from Saul

David's flight to Nob may be dated to the 34th year of King Saul in 1069 BC (see Figure 43). David asked to go to "the sacrifice of the days" for his family. This request narrows the time to the first month of the year (1Sam. 20:6; cf. 1Sam. 1:3; Exo. 13:10). The details are given in the first four days of the month, as David hid for the first three days (1Sam. 20) and then fled reaching Nob on the 4th day. At Nob David was given the old bread of the presence just after it had been replaced on the table with new bread. So the 4th day from the new moon was the Sabbath. The priests were supposed to eat the old bread, but there were 5 loaves left (1Sam. 21:3). As there were a sufficient number of priests (cf. 1Sam. 22:18), no bread would be left after the Sabbath. They would have quickly eaten the bread after a week. Yeshua associates the incident with the Sabbath, and so do the Rabbis, and the text actually proves this, "And the priest gave to him the holy thing, because there had been no bread there except the bread of the presence, that being taken away from before

David's life as a fugitive:

1069	Flight to Achish	1Sam. 21:10
	The cave of Adullam	1Sam. 22:1
	With 400 men	1Sam. 22:2
	In Moab	1Sam. 22:3
1068	The forest of Hereth	1Sam. 22:5
	murders of the Priests	1Sam. 22:17
	David saves Keilah	1Sam. 23:2
	With 600 men	1Sam. 23:13
	The wilderness of Ziph	1Sam. 23:14
1067	At Horesh	1Sam. 23:15
	In Maon	1Sam. 23:24
1066	In Engedi	1Sam. 23:29
	At Wildgoats' Rocks	1Sam. 24:2
	Saul ceases pursuit	1Sam. 24:22
1065	In Paran	1Sam. 25:1
	Watching over Shepherds	1Sam. 25:16
	At the hill of Hachilah	1Sam. 26:1
	Saul ceases 2nd pursuit	1Sam. 26:25
1064	Second flight to Achish	1Sam. 27:2
	David at Ziklag	1Sam. 27:6
1063	Eve of battle of Gilboa	1Sam. 29:11
	Amalek burns Ziklag	1Sam. 30:1

125 Likewise, the partial year that is Rehoboam's accession year, his 1st year and 2nd year are counted as three years. This arrangement demonstrates inclusive counting.

126 This was in 3415 when the messengers went out to announce the coming Passover, and when the pilgrims would have set out (2Chron. 30:4-11; 30:18; 31:1, 5-8). Ephraim and Manasseh humbled themselves and repented in the 2nd half of 3415. These remained in the land unmolested by the Assyrians until the reign of Esarhaddon. But Samaria rebelled a few years later and was exiled. The other cities of Israel submitted to the king of Assyria.

```
Saul falls at Gilboa    1Sam. 31:5
David becomes king of Judah
```

Can these events be fit in 4 years? Let us work backwards. The last segment was in 1063 B.C. The second began late in 1065. It is unlikely that the rest of the log can be fit into two years. It is also unlikely that the king of Gath would welcome David back so soon as a space of two years. David's life is uprooted at least 12 times in 7 years, or once every seven months on average. Most of the movements are in the first part of the chronology. With the shorter chronology, his life would be uprooted 12 times in 3 years, which is once every three months, and if we look at the years before his stay in Ziklag, then 10 times in 2 years, or 10 times in 24 months, i.e. once every two months. It is much more likely that each time Saul left off pursing David that it was for a year.

Another Jubilee Synchronism

According to 1Sam. 7:2, "And it was from the day that dwelt the Ark in Kirat^{h}-Ye'arim, that the days multiplied; and they came to twenty years. Then all the house of Israel was lamenting after Yahweh." This 20 year period was during the second Philistine servitude, 2998-3018. Jewish chronologists, and others that have followed their lead, assumed that the total time between the Ark's capture, and its removal to Jerusalem was only 20 years. The assumption results in contradictions. Saul's reign is impossibly shortened to just 2 years. Samuel's lifespan is injudiciously truncated to only 52 years,[127] and his judgeship all but eliminated as in independent era. "When Samuel became old, he made his sons judges over Israel" (1Sam. 8:1). Fifty-two years do not qualify as old. A further contradiction may be derived: the age of David ends up being 28+ when he slew Goliath. Also it may be derived that Saul was 59 when he became king, when he is portrayed as young. Samuel dies young when he is supposed to be old. Saul becomes king at 59 when he is supposed to be young. David slays Goliath when he is supposed to be a teenager rather than 28+. The post AD 70 Jewish chronologists were not idiots. Their intent was to wreck the biblical chronology and make everyone think the wreckage was the real thing. This is one place where the evidence of their work is exposed.

The intent of 1Sam. 13:1 is to tell us how long Saul had reigned when he blew the trumpet. It is not to tell us the total length of his reign. Likewise, the intent of 1Sam. 7:2 is to tell us how long the Ark had been in Kirath-Ye'arim when the people repented. It does not tell us the total length of time the Ark was there.

It was at the end of the 20 years that Samuel encouraged the people to repent (1Sam. 7:2). According to Rashi and Radak, Samuel had been dead 7+ years before the 20 years ended! Further, 1Sam. 7:6 says, "Then Samuel judged the sons of Israel at Mistpah." This is saying that Samuel's official rule as judge followed the twenty years.

It only makes sense that Saul reigned 40 years (cf. Acts 13:21). This figure may be derived from the enigmatic statement in 2Sam. 2:10, "A son of forty years was Ish-bosheth, son of Saul in his reigning over Israel, and two years he had been reigning, but the house of Judah had been following after David." To understand this statement we need to see 2Chron. 22:2, "A son of forty and two years was Ahaziah in his reigning, and one year he reigned in Jerusalem." The 42 years refer to the dynasty of Ahaziah's parentage from Omri of Israel. The kingdom of Omri was 42 years old when Ahaziah sat upon the throne of Judah. If the line of Jehoram of Israel was terminated, Ahaziah could lay claim to the kingdom. Yahweh raised up Jehu to prevent this outcome, and to prevent Ahaziah from corrupting both Judah and Israel with the sins of Jezebel.

Now in Ish-bosheth's case, the 40 years are a cipher for Saul's total reign. "Son of" means 'an heir of.' Ish-bosheth had inherited a kingdom that was 40 years old. The Hebrew follows the pattern of 2Chron. 22:2 where we read that Ahaziah was a son of 42 years, meaning that he was heir to a dynasty that was 42 years on the throne of Israel. [128] In this case Ish-bosheth was heir to a kingdom of forty years. But it is also possible that Ish-bosheth was born in the same year that Saul became king. Either way the time between the death of Eli and when David brought the ark to Jerusalem was quite a bit more than the 20 years supposed by the Rabbis, since it makes it quite impossible for Saul to be young at his anointing and yet have a son 3 years later that is forty years old. In the end Saul's reign is secured by the Jubilee synchronism in his second year, which makes his reign 40 years, and Samuel's judgeship 19 years. This in itself is a cipher, and everything works out.

Now in the 11th year of David, there is another Jubilee synchronism. From the second year of Saul to the 11th year of David is 50 years, 39 years left to Saul, and 11 years of David make 50 years. The Jubilee beings a new count, wherein the first year of the count is the last Jubilee year. This keeps the seven year sabbatical cycle from creeping forward. Upon becoming king, David captured Jerusalem in his first year; in his second year the Philistines made their first attack, and David defeated them (2Sam. 5:8). In the next year the Philistines tried again to eliminate David (2Sam. 5:2), but failed. David made his first attempt to move the ark to Jerusalem, but David feared Yahweh's wrath in the matter of Uzzah's sin, and so the Ark was turned aside for three months. Therefore, it reached Jerusalem at the commencement of the Jubilee year, "with shouting, and with the sound of the trumpet" (2Sam. 6:15). In 2Sam. 6:5 the mention of the *shofar* is omitted, but in 2Sam. 6:15 the word *shofar* is mentioned along with *teruah*. These two words occur in Lev. 25:9, and together in no other place but 2Sam. 6:15 except as a battle trumpet, which may be sounded at any time. It is true that a shofar and shouting may occur at any time, however, it appears to me that it was intentionally left out of vs. 5 and included in vs. 15 when the proper time arrived for it.

127 Rashi assigns 39 years of Samuel's life contemporary with Eli's judgeship, and then 13 years and 3 months for Samuel's judgeship contemporary with the Ark's sojourn in Kirath-Ye'arim. The age of Samuel at his death is thus 39+13¼ = 52 ¼ years. To limit the Ark's stay at Kirath-Ye'arim, Rashi places a shortened reign of Saul to 2 years contemporary with the last years of Samuel's judgeship, and then this is followed by 7 years for David contemporary with the arks sojourn years 13-20 in Kirath-Ye'arim. Radak gives an almost identical chronology.

128 2Kings 8:26 tells us that Ahaziah was 22 years old when he began to reign. There is no mistake. The 42 years of 2Chron. 22:2 is meant to tell us that Ahaziah was in the line of succession for Israel should the line of Israel end. Ahaziah was the offspring of Omri, king of Israel. That is why Jehu had to eliminate Ahaziah. Even though he was the king of Judah, he could challenge Jehu and unite both kingdoms under himself.

A Weekday-Astronomical Synchronism

The spring of Solomon's 4th year is 3121. The red line (Col. H4) starts the 480th— year of the era of Independence, matching the synchronism given in 1st Kings 6:1.

Now it says that they began to build the Temple "in the second *day* of the second month, in the fourth year of his reign" (2Chron. 3:2). The year is 1019 B.C., and in that year the second day of the second month was the first day of the week.[129] For the new moon was seen the preceding sixth day at sunset, when the Sabbath began, making Sabbath the first day of the month, and Sunday the second day of the month. The new moon was seen on April 29th (sunset Friday) that year. If it had been seen a day early (April 28th), the work would have commenced on the Sabbath. On April 27th the moon had not even reached conjunction. It is therefore proved that the month was not begun with the conjunction, or any day before the first visible crescent. The first day of the week is a logical day to begin a religious building project, as the builders would be resting every Sabbath.

Reign Years of the Kings of Judah and Israel

The data given on the duration of the building of the temple, from Solomon's 4th year to his 11th year, confirm that the regnal year for the kings of Judah were based on the sacred year, beginning on the 1st day of the 7th month. The years were reckoned from autumn to autumn. These reign years with a Tishri 1 epoch are absolutely vital to the correct reconstruction of the reigns of the kings. A formal proof puts the matter beyond any doubt: We are told that the temple construction began in the 4th year in the 2nd month and ended in the 11th year in the 8th month (1Kings 6:1, 38). The second month of the 4th year to the eighth month of the 11th year spans 8 years $\{4_1, 5_2, 6_3, 7_4, 8_5, 9_6, 10_7, 11_8\}$. But 1Kings 6:38 says that the Temple was built in 7 years. Now the reign years are either from Nisan 1 or Tishri 1, and the building years are from either Nisan 1 or Tishri 1. There are four combinations possible, but only one unique solution that satisfies all the data. The building years are counted from Nisan 1, and the reign years are counted from Tishri 1. Only the combination in which Solomon's reign years are from Tishri 1, and the building years from Nisan 1 works.

The above proof is confirmed by 2Kings 22:3. In the 18th year of Josiah they found the Torah, and the following things were done:

In the 18th year	2Kings 22:3
The Temple was repaired	2Kings 22:5
Stone was quarried	2Kings 22:6
Timber was bought	2Kings 22:6
The Torah was found	2Kings 22:8
Shaphan reads the Torah	2Kings 22:8
Shaphan reads it again	2Kings 22:10
They visit Huldah	2Kings 22:14
The elders are summoned	2Kings 23:1
Josiah reads the Torah	2Kings 23:2
Baal objects burned	2Kings 23:4
Baal priests deposed	2Kings 23:5
Cult houses destroyed	2Kings 23:7
Horses removed	2Kings 23:11
Chariots burned	2Kings 23:11
High places defiled and	2Kings 23:13
High places of Samaria	2Kings 23:19
Baal Priests sacrificed	2Kings 23:20
Passover commanded	2Kings 23:20
Passover celebrated	2Kings 23:22
In the 18th year	2Kings 23:23

It is impossible that all the events were done in 13 days before the Passover. But they are recorded in the 18th year of Josiah according to 2Kings 22:3, and so also the Passover is in the 18th year of Josiah according to 2Kings 23:23. This can only mean that the 18th regnal year began the previous fall.

The Kings of Israel, on the other hand, beginning with Jeroboam I at the division of the kingdom, reckoned their years from Nisan 1. For this is the only arrangement that will work with the synchronisms linked to the kings of Judah. The two kingdoms can be forced into using the same regnal year for a few synchronisms, but when many are charted, it quickly becomes obvious that it is impossible. The whole works only when Tishri 1 is used as the epoch for Judah's kings, and Nisan 1 for Israel's kings. The reign lengths of all the other kings of Judah are extrapolated on the basis of a Tishri 1 epoch, and in consequence of this all the kings of Israel are put on a Nisan 1 epoch.[130] The rule is of such a nature that it is assumed unless proved otherwise, and that occurs only in the one case of Zedekiah where additional data proves it. Zedekiah was the only Jewish king appointed by a foreign power that customarily used a Nisan 1 epoch.

This kings of Judah used the *accession year* method of regnal succession. When a king died before completing his final year, his son waited until that year was complete before counting his own first year. This part year, that was not counted as year one, for the new king was called the *accession year*. The accession *year* is marked with a Hebrew א in the charts. Sometimes a synchronism is matched to the *accession year*, as is the case when Asa is said to reign in the 20th year of Jeroboam. This is marked in 3176 as א. The use of this method in Judah is proven by the use of the *non-accession year* method for the kings of Israel. In the *non-accession* method, the last year of the previous king is counted as the first year of the new king. This results in the same year being counted twice: once as the final year of the old king, and once as the first year of the new king.

Sometimes regnal year counting assumes a method that is different than native foreign kings would count. The Babylonians and Persians always counted their reigns from Nisan 1 using an accession year method. However, it is evident from Nehemiah 1:1 and 2:1 that a Tishri epoch is used to count the 20th year of Artaxerxes in Judea.

Hezekiah's Jubilee Synchronism

In the 14th year of Hezekiah, Sennacherib invaded Judea. At the beginning of the 15th year of Hezekiah, the prophet promised deliverance from Assyria, and provided a divine sign. (The sun, moon, and stars were given as signs for months, days, and years.) This sign relates to the Sabbatical and Jubilee year, because Isaiah uses a definite allusion to these years, "Eat this year such as groweth of itself; and the second year that which springeth of the same: and in the third year sow ye, and reap, and

129 Sunday, May 1, 1019 B.C. Julian calendar.

130 The Mishnah says the new year for Jewish kings is Nisan 1. This was never the case, either for Bar Kochba, the Herod's or the Hasmoneans. The sole case of a Jewish king counting from Nisan is Zedekiah, that that is because he was appointed king by the Babylonians who customarily used a Nisan 1 epoch.

plant vineyards, and eat the fruit thereof" (Isaiah 37:30). This recalls the Jubilee legislation in Leviticus 25:11, "neither reap that which groweth of itself, nor gather the grapes in it of thy vine undressed,"[131] and likewise, the sabbatical year legislation, Lev. 25:5, "That which groweth of its own accord of thy harvest thou shalt not reap, neither gather the grapes of thy vine undressed: for it is a year of rest unto the land".

So the 15th year of Hezekiah was the Sabbatical year 7/49, and the 16th year was the Jubilee year, 1/50. This Jubilee is synchronous with creation. Dividing world era for this Sabbatical year, 3430 ÷ 7 = 490, and 3430 ÷ 49 = 70, shows that 3430 is sabbatical, and 3431 is a Jubilee. This Jubilee is synchronous with the 2nd year of Saul: 3039: (3431 – 3039) ÷ 49 = 8; it also synchronizes with beginning of the cycles when Israel entered the land: 2549 : (3431 – 3549) ÷ 49 = 18.

There is a divine puzzle in these two Jubilees. First Saul's Jubilee is 490 years after the entry into the land, or 10 Jubilees. This is 70 x 7. Secondly, Hezekiah's Jubilee is the 70th Jubilee of the world, and the 490th Sabbatical year! This also is 70 x 7. Could God have just picked this point in time at random? Or does He have some purpose in it? The evidence points strongly to divine design and purpose.

The reigning chronological paradigm of the 20th century often stated that Sennacherib's host was not slain in 711 B.C., because it misinterpreted the Scripture's statement that he was the king of Assyria. Therefore, they redacted the invasion later when Sennacherib was sole king, albeit at the expense of the Scripture. That move was only possible because the paradigm rejected the synchronisms in 2Kings 18:9-10. However, biblical scholars less willing to quickly fault the scripture realized that "king" in Hebrew includes the notion of a crown prince that has been appointed king, and given limited or full powers before the death of his father. A similar sense applies to Tirhakah in 2Kings 19:9. The usage of the term "king" for a crown prince, usually with authority to speak as the king or act as king, often in military matters, is illustrated by the son of Jehoshaphat, whose son was king while he lived (2Kings 8:16), and Jehoash of Israel, who reigned as corex for 3 years (2Kings 13:10) while his father lived. Arguments that Sennacherib could not have been king are based either on the alleged silence of Assyrian archeology on the matter or the assumption that king cannot mean crown prince or co-rex. The claim that Sennacherib was not a king is tantamount to claiming that it is explicitly written in the record that Sennacherib was not a king during the 14th year of Hezekiah. No such evidence has come forward. In fact, the archaeological record includes some strong hints that Sennacherib was corex, crown prince. It is therefore quite premature to judge the scripture as wrong, and those who do it invariably have a world-view that does not give the Scripture its proper position. The Jubilee synchronism confirms the correctness of the chronology.

Israel becomes 'Not My People"

Manasseh reigned in the latter half of 3443. Since Hezekiah expected to live 15 years after his sickness, and since Manasseh was so young, the very brief co-regency is sensible, perhaps lasting for only 3 months. Now, Isaiah prophesied "sixty and five years shall Ephraim be broken, that it be not a people" (Isa. 7:8). This era is charted 1 … 65. This prophecy was fulfilled by Esarhaddon. "In B.C. 673 or 672 Esarhaddon carried into captivity the remnant of Israel, and sent Manasseh, King of Judah, prisoner to Babylon. In the following year, B.C. 671, Manasseh was released" (George Smith).[132] Putting the 65th year in 673/72 (3468) means that the 1st year is 3403, the 4th year of Ahaz. Isaiah prophesied the demise of Pekah of Israel[133] after giving the 65 year prophecy. Therefore, the 65-year prophecy must begin before Pekah is off the throne of Israel. The last opportunity for this is the 4th year of Ahaz, 3403, since Pekah was chased out of most of his domains that year by the Assyrians.

On the world era, Isaiah 7:16 ≤ 3403. Isaiah 7:8 ≤ Isaiah 7:16. Therefore, Isaiah 7:8 ≤ 3403. Isaiah 7:8 begins the 65 year prophecy, so the 1st Year ≤ 3403. That is, the 1st year begins before or equal to 3403. Therefore, the 65th year must begin before or equal to 3467.

On the other hand, 40 years are required for the sin of Judah: 1 … 40. Fifteen years are already taken by, Amon (2), Jehoahaz (1), Jehoiakim (11), and Jehoiachin (1). This leaves 25 years to Manasseh before he repented. Since Esarhaddon removed king Manasseh of Judah, and the remnant of Ephraim in the same operation, the 25th year is synchronous with the 65th year.

Esarhaddon carried off the remnant of Ephraim and Manasseh and replaced them with the Samaritans (Isa. 7:8; Ezra 4:2). One then may wonder why Ephraim and Manasseh are mentioned in 2Chron. 34:6 and 34:9. A good clue is found in 34:6, "in the cities of" and "in their ruins all around," and also 2Kings 17:23. The king of Assyria named in Ezra 4:2 is the same as the one in 2Kings 17:23 who settled the land with foreigners, "And they took possession of Samaria and lived in its cities." Read up to 2Kings 17:41, "So these nations feared Yahweh and also served their carved images...to this day." These Samaritans adopted the identity of Israel so much that the Samaritan women would say "Are you greater than our father Jacob? He gave us the well" (John 4:12). So the usage the terms Ephraim and Manasseh refers to the territory of Israel and the people who had adopted their identity. But the real descendants of Israel were no more in the land.

The scripture presents us with a mystery when it says that Ephraim would be "not a people," and then it says in Jeremiah that Israel would never cease to be a nation (Jer. 31:36; 33:24-26). I am suggesting that a remnant of Israel was assimilated to Judah, and then the majority were scattered, and that they were still the nation in Yahweh's sight, though disobedient, and to be mixed with the other nations, in order to bring the nations into Israel when the Messiah came (Gen. 48:19; Ezek. 37). He did say they were "Not My people," (Hos. 1:10), and this is a reference to their spiritual status, and not their national status. The ungodly are cut off from Jacob and again they become "My people" (Hos. 2:23; Rom. 9:26). The spiritual status is restored in Messiah. But

131 The texts may seem contradictory, but the idea is that one should not *gather or reap* to harvest the crop, nor to *sow or plant* new crops. Foraging was permitted, which is what God meant Hezekiah to do.

132 *The Romance of Bible Chronology*, (6), pg. 217. *Messiah: His First Coming Scheduled*, David L. Cooper (31), pg. 295. This invasion was in the 10th year of Esarhaddon. Manasseh was taken prisoner in 672 B.C. sometime during his 25th year.

133 "For before the child shall know how to refuse the evil, and choose the good, the land that thou abhorrest shall be forsaken of both her kings" (Isaiah 7:16).

they never ceased to be a nation in Yahweh's sight. Therefore, what do we make of the words "not a people" in Isa. 7:8? We could say that it refers to the spiritual status of Israel, however they had lost that already before the 65 years were up. I will suggest that 2Kings 17:26-31 gives the answer, "The nations that you have carried away and placed in the cities of Samaria...every nation sill made gods of its own." The meaning is the land of Ephraim would not be a nation because a mixture of nations was placed there that had no national or religious unity when they were placed there. Then they adopted the identity of Ephraim and Manasseh, but they were not Ephraim and Manasseh. The Samaritans were "Israel Identity" but they were not really Israel. They were not even a nation.

Egyptian Chronology from Shoshenq I

Jeroboam I fled to Shishak (Shoshenq I) at the end of Solomon's reign (1Kings 11:40). Accordingly, Shoshenq I became Pharaoh in Tanis and Bubastis before 983 B.C. Psusennes II reigned at Thebes in south Egypt at the same time. Shoshenq I was still living in 978 B.C., since this is when Judah was invaded in the 5th year of Rehoboam. As it is preferable to lengthen dynasty XXII no more than necessary (giving all due credit to the labors of Egyptologists), the lunar date in year 5 of Shoshenq I (IV Peret day 25) is calculated as LD1 (first invisibility), and placed on -981.12.16 (Dec. 16, 982 B.C.). This places Shoshenq I's first year in 986 B.C., where it follows immediately the reign of Siamun at Tanis, whose reign is fixed by two lunar dates. It appears that Siamun did not reign past his 17th year, unless he had some sort of 2 year overlap with Shoshenq I. Egyptologist's assign Shoshenq I a reign of 21 years.

Osorkon I reigned after Shoshenq I. During his reign Zerah, the Nubian General of Osorkon I invaded Judah with a thousand thousands of men in the reign of Asa (2Chron. 14:9). Asa could not defeat such a vast army, so he cried out to Yahweh, and he was delivered.

Osorkon reigned at least 33 years, and is traditionally assigned a reign of 35 years, which I have adopted. After Osorkon I Egyptian chronology becomes muddier. Egyptologist Karl Jansen-Winkeln writes:

> This result is also realistic, as those reigns the duration of which is not certain, were assigned minimal values here. Where these missing years must be placed is a matter of speculation, but there are several possibilities.... Osorkon I and his successors could have ruled longer than we have assumed.[134]

In fact Manetho places 3 kings between Osorkon I and Takelot I, and states they reigned 25 years. The gap is 29 years. We know the name of one king, and possibly a second. The third remains the mystery Pharaoh. Other than Manetho, it is not known how long they reigned. Manetho's figure could be accepted if the extra 4 years were added to Osorkon I's reign or elsewhere between the end of Shoshenq I and Osorkon II. Egyptologists generally disregard Manetho here, assigning from 0-2 years to the gap. However, the Scripture suggests that Manetho was not far wrong in his figures.

Osorkon II, it appears, reigned much longer than Kitchen tells us. David Aston argues for up to 45 years based on Thebian genealogies. It is also known that all of Osorkon II's sons died before he did. I believe the reason Kitchen cannot accept Aston's evidence is that it will upset the link to Shishak as Kitchen has determined it from following Thiele.[135] Kitchen is an Evangelical Christian, and Thiele was a Seventh Day Adventist. All Kitchen needs is for the chronology to expand by one year, and his date for Shishak's invasion of Judah on the basis of Thiele is invalidated! Kitchen could avoid this result by accepting that Takelot II is a Thebian king only, and that Shoshenq III followed Osorkon II directly, but he does not accept this. However, Aston's explanations makes sense, and most Egyptologist's have now accepted it. If Kitchen accepts it, then it implies that his biblical chronology, based on Thiele, should also be re-evaluated. However, the Church is stuck with Thiele's tradition, which has its origins in accepting the assured conclusions of Assyriologists over and above the Scripture.

The reigns of Shoshenq III, Takelot II, Pedubast I, Iuput I, and Pami are all interlocked with known historical synchronisms, and a few astronomical synchronisms. There is a total lunar eclipse in the 15th year of Takelot II (1/14/829 B.C.) followed by a revolt (IV Shemu 25 = March 7, 829 B.C.). There is a lunar date in the 39th year of Shoshenq III. I am fairly certain that this is correct, despite the gap going before this period, and a few years of possible discrepancy after it.

Shoshenq V has 38 attested years, linking closely to his father Pami. Shoshenq V was dead by the 20th year of Piye, and Osorkon IV is mentioned in his campaign stela. Piye reigned at least 27 years, and is held to have reigned 31, when he is followed by Shabaka. The chronology of Egypt and Assyria has been adjusted according the the Biblical chronology. Hezekiah's 14th year was 712/711 B.C. This places the battle of Eltekeh in 712 B.C., wherein a coalition of Egyptians were crushed by Sargon and his crown prince Sennacherib. The reign of Osorkon IV ended at this time, shortly after Shabaka who was succeeded by Shabataka and the young general Tirhakah, who was also the crown prince for Egypt.

The Scripture has been severally attacked for naming Tirhakah and Sennacherib as kings in connection with Hezekiah's 14th year. However, the attack is entirely an argument from silence. It assumes that they cannot have been kings because no ancient source outside the Scripture names them as such. A little lesson from history should help. Scripture critics in the past centuries constantly denied the existence of kings, cities, and even entire nations mentioned in the Scripture. And then the archaeologists found them, and have shut them up. It is secular chronology that is in tatters, and needs to be healed by the Scripture, and not the other way around. Only Scripture can remove the reek of death from the graveyard of the nations.

Scripture gives us at least one example of a temporary coregent, namely Jehoram of Judah, in 2Kings 1:17. I have called him "prorex" in the charts. He was appointed king to guard against the possibility that Jehoshaphat, his father, might be slain in the same battle that killed Ahab. Also, in ancient Ur, there was a practice of appointing a temporary king during an expected eclipse so that the bad omen would not fall on the real king. So who is to say that Tirhakah and Sennacherib were not kings? The same prejudice against the Scripture is not applied to other ancient sources. The critics are ready to believe them on the basis of one broken tablet, but as soon as something reported from Scripture appears to be odd or unusual to them, they are ready to call the author a liar on the basis of philosophical assumptions.

134 pg. 263-264, *Ancient Egyptian Chronology*, 2006, Brill, Krauss, Hornung, and Warburton.

135 *The Mysterious Numbers of the Hebrew Kings*, Thiele.

Shalmaneser III left us with a record of the battle of Qarqar, wherein he fought with 12 kings, including Ahab of Israel. This battle is said to be the largest in history up to that time. After the battle was lost (but Ahab was not killed), the coalition broke up. Shortly thereafter Ahab was killed in another battle by his former Syrian ally, the king of Aram (1Kings 22:31). The battle of Qarqar may be placed in 906-905 B.C. Afterward, Ahab was killed by the Syrians in 905 B.C. The Assyrian records date this to the 6th year of Shalmaneser III. Twelve years later, in a Bull Inscription, Shalmaneser says he collected tribute from Jehu in his 18th year. Jehu became king in 893 B.C. The distance between Ahab's death and Jehu's accession is just over 12 years. This data is sufficient to fix the reign of Shalmaneser to within a year.

The following Assyrian history is less certain. The next fixed point occurs in the 10th year of Ashur-Dan II wherein the Assyrian Eponym Canon records a solar eclipse. This eclipse took place on June 15, 763 B.C. Given the fixed points for Shalmaneser III and Ashur-Dan II, it is apparent that 52 years are missing from among the records Assyriologists have been able to recover or reconstruct. The reason for their loss is that a scribe either by mistake or design let 52 names drop out of the eponymous lists, as is bound to happen for any number of reasons. No one knows for sure if the records can ever be found and recovered. We would not have the biblical record to set things straight if God had not preserved and kept it from destruction, and the preserved scriptures reveal the error in Assyrian history.

However, there are those who trust the broken and incomplete remains of Assyrian history over the Scripture. This trust comes from the academic pride of Assyriologists who don't think they need the Scripture to set things straight. The question is why are they so zealous to construct an Assyrian time-line whilst ignoring Scripture? A big part of the answer is that they have adopted an anti-biblical world-view. A lot of people like nothing better than to see the literal sense of the Scripture disproved. These philosophical positions are not only out in the secular world. They have invaded the Church. The Church is full of people who do not put plain statements of Scripture above the faulty conclusions of bad science done outside the framework of God's word. It seems like the Church is not sure which way to turn. It wants to make a good show of believing in God and his word, but then on the other hand, many within it would rather compromise with the enemy without that is seeking to destroy it. Rather than arm themselves and fight, and discover those truths necessary to disarm the enemy and defeat it, they are busy instead adopting the assumptions and positions of the enemy.

The sooner we recognize that the enemy is within the gates, of what is supposed to be orthodox and sound doctrine, the better. Let us now cross-examine the man who built the foundations of the reigning biblical chronological paradigm. Let us see what he built it on. His name is Edwin R. Thiele. His chronology has infested just about every biblical publication and scholarly source you can imagine. One cannot walk through a Christian bookstore, university library, or even local library without passing within feet of Thiele's corruptions.

However, sincere Thiele may have been, he had a wrong world view, and low view of the Scripture. He is almost singlehandedly responsible for destroying biblical chronology and reducing it to the level of any other ancient chronological recovery effort. With the work of Willis Judson Beecher, Martin Antsy, and David Cooper, biblical chronology was on a track towards a solution. Thiele derailed the whole effort, put it on the wrong foundations, and even undid the work of his fellow chronologists. So let us see where the whole Evangelical world has put their faith:

> In a discussion of the regnal data of Hezekiah, [biblical chronological truths], it is of paramount importance that the synchronisms between him and Hoshea be recognized as late and artificial [i.e. mistakes]. These synchronisms came into being because the final editor of Kings did not understand dual dating for Pekah (pg. 174, *Mysterious Numbers*).

The [ ] are my clarifications of Thiele's academic obfuscations. We are not speaking about simple scribal errors here. The original was written correctly. No one could have changed the synchronisms because the mistake would have been immediately discovered and corrected by any reader. The 4th of Hezekiah goes with the 7th of Hoshea, and the 6th of Hezekiah goes with the 9th of Hezekiah. The siege lasted 3 years. So that makes three witnesses to the same truth: 7-4 = 3; 9-6 = 3. Three years. You can't accidentally mess one of these witnesses up without the other two exposing the error. There was no editor who "did not understand dual dating"; There is simply Thiele who does not accept the thricely witnessed dual dating between Hoshea and Hezekiah.

Texts rejected by Thiele:

2Kings 18:9	4 Hezekiah = 7 Hoshea
2Kings 18:10	6 Hezekiah = 9 Hoshea
2Kings 18:1	begin Hezekiah = 3 Hoshea
2Kings 17:1	12 Ahaz = 1 Hoshea
2Kings 15:27	52 Uzziah = begin Pekah
2Kings 14:23	15 Amaz. = begin Jeroboam
2Kings 15:1	27 Jeroboam = 1 Uzziah
2Kings 15:32	2 Pekah = begin Jotham
2Kings 16:1	17 Pekah = begin Ahaz
2Kings 21:1	29 Hezekiah = 1 Manasseh
Ezekiel 4:5	390 years
2Chron 36:21	70 Sabbatical years

Edwin Thiele's errors are encapsulated in his *dual dating* definition on page 55 of *Mysterious Kings*.

> Concerning the regnal data for coregencies and rival reigns, it is vital to know that in five of the nine such reigns the datum for the length of the reign is the number of years from the beginning of the period of overlap to the end of the sole reign, but the synchronism of accession marks the end of the overlap and the commencement of the sole reign. This I term *dual dating*.

The text upon which Thiele bases his dual dating paradigm is 1Kings 16:23:

> In the thirty-first year of Asa king of Judah, Omri began to reign over Israel, and he reigned for twelve years; six years he reigned in Tirzah (ESV).

Omri became king over half the people in the 27th year of Asa (1Kings 16:15-21). Any sane interpretation would say that Omri ruled half of Israel for 6 years at Tirzah, and then when he defeated the other half, he ruled subsequently for 12 years over all of it, starting in the 31st year of Asa. However, Thiele and others think they have proof that Omri died in the 38th year of Asa, and that since 38-27+1 = 12 years that Thiele is right:

> And Omri slept with his fathers and was buried in Samaria, and Ahab his son reigned in his place. In the thirty-eighth year of Asa king of Judah, Ahab the son of Omri began to reign over Israel, and Ahab the son of Omri reigned over Israel in Samaria twenty-two years (2Kings 16:28-29).

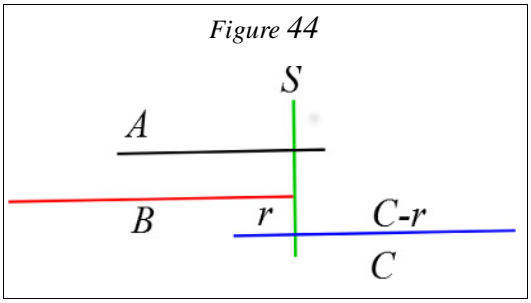
It seems like a contradiction. Omri can't rule past the 38th year of Asa, or can he? This scripture lets us know that we cannot

assume that Omri's death precedes the account of Ahab in time:

> Jehoshaphat slept with his fathers and was buried with his fathers in the city of David, and Jehoram his son reigned in his place. He had brothers, the sons of Jehoshaphat: Azariah, Jehiel, Zechariah, Azariah, Michael, and Shephatiah; all these were the sons of Jehoshaphat king of Israel. Their father gave them great gifts of silver, gold, and valuable possessions, together with fortified cities in Judah, but he gave the kingdom to Jehoram, because he was the firstborn. When Jehoram had ascended the throne of his father and was established, he killed all his brothers with the sword, and also some of the princes of Israel. Jehoram was thirty-two years old when he became king, and he reigned eight years in Jerusalem.

Open and shut case? All of Jehoram's 8 years follow Jehoshaphat? That would be incorrect. All biblical chronologies—even Edwin Thiele's have a regency between Jehoshaphat and Jehoram. The Scripture requires it: Jehoram of Israel reigned in

Figure 44



the 18th year of Jehoshaphat (2Kings 3:1). Jehoram of Judah reigned in the 5th year of Jehoram of Israel (2Kings 8:16). Jehoshaphat reigned 25 years (1Kings 22:41-42). Take a look at the charts. The only way the numbers work is when Jehoram's reign overlaps Jehoshaphat. Therefore, Jehoshaphat remains on the throne when Jehoram becomes king. Of course the murders were committed after the old king died. The regency is confirmed here:

> And in the fifth year of Joram the son of Ahab king of Israel, Jehoshaphat being then king of Judah, Jehoram the son of Jehoshaphat king of Judah began to reign (2Kings 8:16).

Therefore, when the Scripture says Omri defeated his rival and became king over all Israel in the 31st year of Asa, and reigned for 12 years, we can accept it at face value. Yes, it results in a regency between Omri and Ahab. But as shown, this is permitted. The last thing we would want to do is make an odd interpretation of the text by back dating the twelve years, and then proceed to use the exceptional case as a rule for every other synchronism!

Thiele based his *dual dating* principle on 2Kings 16:23, or rather a misinterpretation of it based on the assumption that Omri must have died in the 38th year of Asa. The Scripture customarily tells us that one king died, and then begins to tell us that his son began to reign. But this order of events is not an assured order of chronology. We find further exceptions to that assumption in 2Kings 13:9-10 with the Jehoahaz to Jehoash connection, and 2Kings 16:20 concerning Ahaz to Hezekiah. There is also 2Kings 15:38 concerning the Jotham to Ahaz connection, yet we learn from 2Kings 15:30 that Ahaz was in a regency with Jotham from the 17th to 20th years. All these kings would have seemed to have died before the reigns of their sons began if assuming that all accounts were in chronological order. However that is not the historical method being used. The method used is to write a complete account of one king, and then to go on to the next. One does not read the obituary in the newspaper and assume that people died in the order that the reporter listed the names.

Assyriologists have been busy performing an archaeological autopsy on Assyrian history. They are by no means perfectly agreed, and among their disagreements there is room enough for biblical truth to straighten out their uncertainties. Thiele should have known this. I think he would have known this. However, what the world wanted to hear was that the Scripture could be figured out on the basis of the assured results of Assyriology, and not Assyriology on the basis of Scripture truth. If Thiele had not met that desire, then someone else would have.

In order to make the Scripture agree with the Assyriologists chronology requires a deletion of 52 years from biblical chronology. So where did Thiele delete and add?

1 Amaziah to Jeroboam	−12
2 Jeroboam to Azariah	−23
3 Azariah to Pekah	−12
4 Hezekiah to Manasseh	−10
5 Jotham to Ahaz	+4
6 Ahaz to Hezekiah	+1
	= −52

A vital point here is that the nature of Thiele's alterations are arbitrary. His *dual dating* procedure and assumption of undocumented coregencies allow him to adjust the chronology wildly. He assumes a 10 year regency between Hezekiah and Manasseh. How then were 10 years determined, and not 5 or 7 or 2? It was determined by the requirements of figures outside the Scripture from sources that were not certified by the Scripture. Such adjustibility makes the non-biblical source the final judge of perfectly accurate chronology.

Thiele introduced a fraudulent method of connecting reigns so he could cover up the fact that he was contradicting Scripture. He reduced the synchronism to meaninglessness by proposing that the accession date marks the end of a regency and the start of a sole reign. What this would mean is that a synchronism does not mark the start of a reign! Or put it another way, to please his secular colleagues, he split the reigns in the middle where he needed to, to arrive a presupposed result. The years before the split he said were a coregency and the years after a sole regency. He then claimed to match the synchronism by placing the boundary of the coregency to sole-regency at the end of the preceding kings reign using synchronisms already linked to the end of a preceding kings reign, where they typically occur in the cases where there is no coregency at all:

Refer to Figure 44. Given three reigns of length A, B, and C. Reigns A and B are already anchored, and we wish to place reign C using a synchronism. The general synchronism is: "The blue king reigned in the Sth year of the black king for C years." The rule says that the blue reign must begin at point S, with time going from left to right (r=0). But Thiele said that the reign may begin r regency years earlier than S. This makes the sole reign of length C-r. However, we may pick any value of r and the reign length will still be C, because r+C–r = C. Any value of r<=C will satisfy the synchronism since no value of r is stated. Therefore, a regency may be arbitrarily created where none is proved to exist. R cannot be determined here without assuming a value for it.

Now in the case of a true coregency, the synchronism point S falls before the end of the red king. Refer to Figure 45. The overlap is uniquely determined: $r = B–S+1$. For example if B is 25 years, and S falls in the 18th year of B, then the overlap is years 18 to 25, or 8 years. Notice that the rule is obeyed: the blue reign begins at point S, and r is uniquely determined without having to be assumed.

Now, as is usually the case, S falls after B at S = B+1 year, as one king often has his reign stated after the first ends. In that

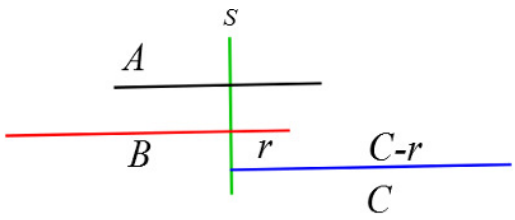
case $r = B–(B+1)+1 = B–B–1+1=0$.

Rule 1: A reign always begins at the point stated by a synchronism.

Rule 2: If there is no synchronism, then a reign begins at the end of the previous reign.

Rule 3: A gap between eras or reigns must be uniquely proved. Arbitrary placement of gaps is not allowed.

Figure 45



Rule 4: A sole reign of a senior king includes the years he shares with a junior regent, and excludes the years when he himself was a junior regent.

Rule 5: counting by the accession year method is the rule unless proved otherwise. Accession counting is counting from 0.

Rule 6: A regency never counts from 0. If it is counted it starts with 1.

Rule 7: A regency may not be counted at all, but the regent's people may continue to date documents according to the years of the Senior regent.

Rule 8: Accession by assassination or murder is almost always counted from 1.

Rule 9: A reign must begin with a synchronism (rule 1), or following another reign (rule 2). If a regency is implied by the synchronism, it may be that only the years of sole-regency are counted by the sum of years. All the data must be tabulated before deciding if the regency is included in the count.

Rule 10: When it cannot be determined if the regency years are included in the total reign count, then they must be excluded.

Rule 11: A regency cannot be assumed. It must be proved by a synchronism.

Josiah to Jehoiachin, Kings of Judah

Ezekiel 1:1 begins a 30-year era in the 18th year of Josiah, 3517, and synchronizes it with the 5th year of Jehoiachin's captivity 3547. This makes the 1st year of Jehoiachin's captivity 3543. According to the Babylonian Chronicle, Jerusalem fell on the 2nd day of Adarru in the 7th year of King Nebuchadnezzar: (March 16, 597 B.C.).[136] This means that 3542. .598/597. B.C.[137]

Since Jehoiachin ruled three months, and was carried off in the spring by the king of Babylon, the death of his father, Jehoiakim occurred in the winter of **3542**. The first part of **3542** is the **11**th year of Jehoiakim. This makes his **4**th year **3535**. The autumnal year is *Tishri* **605** to *Tishri* **604**: **605/604** .

Jeremiah confirms the chronology by stating that he prophesied from the **13**th year of Josiah to the **4**th year of Jehoiakim for **23** years. Therefore, **3535** – **3512** = **23**. This leaves the **5**th, **6**th, and **7**th months of **609** B.C. for the reign of Jehoahaz. Josiah was killed in the **17**th year of Nabopolassar, in the month of Duzu/Tammuz (June **25** – July **23**) **609** B.C.[138]

This means that Jehoahaz's three-month reign would stretch into the new year, going past *Tishri* **1**, **609**. The remaining space requires, **609/608** (**3531**) to be Jehoiakim's *accession year.*

136 This date is derived from VAT 4956. *Venus Astronomical Text* 4956 records a sufficient number of astronomical observations in the **37**th year of Nebuchadnezzar to obtain an unambiguous fix on the B.C. date. The text of the **7**th year is *British Museum* Tablet no. 21946.

137 The double notation 598/597 means that 3542 began in 598 and ended in 597.

138 Finegan (38), Handbook of Biblical Chronology, §430.

Seventy Sabbatical Years And the Babylonian Exile

Looking back to the first oppression of *Chushan-Rishathaim*, (in **2568**), and beginning at that point, is column H1 tabulating the years of Israel's sin (**390**), and Judah's sin (**40**). Each time a sabbatical or Jubilee year lands in these years, it is counted. **2568** is a sabbatical year: **7/21**, and so is **2575** : **7/28**. When Israel repents, and a Judge delivers them, the sin years are *suspended*, e.g. H1-2576 to H1-2616. The **390** years of sin and **40** years of sin add up to **430** years. Next divide by 49 and 7 to find out how many Shemittah's should be contained in these years: **430 ÷ 49 = 8.77**, and **430 ÷ 7 = 61.4**. This indicates that **430** years should contain around 9 Jubilees and 61 Septennial years, or **70** sacred years.

Sin Period	No. Broken	Cumulative
Chushan	2	1–2
Eglon	3	3–5
Jabin	3	6–8
Midian	1	9
Abimelech	0	9
Ammonites	3	10–12
Philistines I	7	13–19
Philistines II	3	20–22
Israel	41	23–63
Manasseh	4	64–67
Amon	1	68
Jehoiakim	2	69–70
Total	70	70

The total is 70 according to 2Chron. 36:21. They are individually counted out in column G1, **1** to **70**. If the reader will read down through this in the chart and note that the years of sin are only added when the people are being punished by servitude or ruled by a wicked king, then he will note that the total number of sacred years is exactly **70**. The **70**th year is in G1- **3541**. These **70** sacred years are God's reason for the **70**-year exile in Babylon.[139] The reader should also notice that **134** of the **390** years are counted during the time of the Judges, and that these **134** years are *exactly* the years that are not counted in the **–480–** years of **1**st Kings 6:1.

The seventy broken sabbatical years stretch from Israel's entry into the land, in **1592 B.C.**, to Judah's exile from the land in **597 B.C.** Successfully locating all these sacred years validates the chronology. Notice the three sacred years **20**, **21**, **22**, beginning in the **2**nd Philistine Servitude in **2998**? These are in the **20**-years following the Philistine victory over Eli and his sons, when the ark was captured (1st Samuel 7:2). The **23**rd broken sacred year falls in the **7**th year of Rehoboam (**3163**).

Notice, however that the year **135** of the **390** is not counted until the **3**rd year of Rehoboam. This is because the Scripture says, "for three years they walked in the way of David and Solomon" (2nd Chronicles 11:17). Sacred years **26** and **27** are a sabbatical **7/49** and Jubilee **1/50** respectively in the **6**th and **7**th years of Baasha, King of Israel. All sacred years are sabbatical, but not all sacred years are *sevens*. Only the seventh year is a *seven*. The Jubilee is a sacred year, but it is not a *seven*. When God speaks of "her Sabbaths", he means all sacred years. When He speaks of *Seventy Sevens* (Daniel 9:24), he means only the seventh years.

Although the righteous King Asa ruled in Judah, the sacred years are counted as unobserved if the kingdom of Israel does not observe them. For the kingdom was taken from Solomon's son and given to Jeroboam, who received ten tribes, while Solomon only received one tribe. All the kings of Israel were wicked from Jeroboam to Hoshea. However, Israel repented and went to the feast of Passover in the first year of Hezekiah, and it appears that this was permitted by king Hoshea assuming he was not already shut up in prison by the king of Assyria. Nevertheless Israel broke down all the pillars, the Asherim, the high places, and the altars that were in Judah, Benjamin, Ephraim, and Manasseh, "until they had destroyed them all" (2Chron. 31:1). Therefore, no more Shemittah years are counted against Israel after that day.

I am confident that the solution is mathematically unique and that no other can be constructed without contradicting Scripture texts.

The Babylonian Exile

Of the **70** land Sabbaths that Israel and Judah did not observe, the final one falls in the **39**th year of the **40** years for the sin of Judah (599/598 B.C.). This observation will be key in determining which of the four deportations of Jews from Judah were meant to mark the exile as calculated by the prophecy:

Year	Deportees	Yr Neb	Texts
605/04	Daniel etc	A/1	Dan 1:1
597	3023 Persons	7	Jer 52:28
587	832 Persons	18	Jer 52:29
582	4600 Persons	23	Jer 52:30

The second key is found in Jer. 29:10. The deportees of 597 (Jehoiachin etc.) were told that they would endure an exile of 70 years. This assures us that the exile did not begin after 597, and because the letter was addressed to these exiles, it implies that the count of years begins with their exile. These two keys uniquely determine the 597 date for the commencement of the exile: The 70th Sabbatical to be violated came after Daniel's exile (excluding it), but before Jehoiachin's exile (allowing it), and the letter from Jeremiah states that it had begun equal to or before that date (excluding all subsequent exile dates). The mathematical constraints here, the justice of the Almighty, and the expectation of plain sense from the Scripture require 597 B.C. to be the commencement of the 70 year exile.

Also confirming this choice are the dates in Ezekiel, which are in terms of the exile of Jehoiachin, which are the only year by year enumeration of years from any of the deportations. From this fact, it is plainly clear that the **70** years of exile for **70** desecrated land Sabbaths cannot begin before 599/598 B.C. It is also plain that since the **40**th year of sin for Judah is 598/597 B.C., that Yahweh's punishment for the years of sin cannot begin before that point. If Judah is exiled out of the land before the final Sab-

139 2nd Chronicles 36:21; Leviticus 26:34, 43.

bath year is profaned, then it begs the question as to how they would be required to stay in exile for the 70th year since they would not have been in the land to violate the 70th Sabbatical year. The Scripture says that the land would rest for the Sabbaths that they did not keep while they were dwelling in the land:

> As long as it lies desolate it shall have rest, the rest that it did not have on your Sabbaths when you were dwelling in it (Lev. 26:35).

It is a simple contradiction of Yahweh's justice to suppose that Judah was exiled seven years before they violated the perfect sum of 70 land Sabbaths. Yet this is exactly what the tradition says. The tradition says that the exile began with captivity of Daniel and his friends in the 4th year of Jehoiakim, i.e. 605 B.C., along with some others from the royal family and nobility (Dan. 1:3). These youths were a relatively small number compared to the 3023 persons exiled in 597. Contrary to all of these facts, the traditional assumption claims that the exile began in 605/604 B.C. It is a false assumption suggested by ignorant inattention to the Scripture, and seized upon as the necessary party line by sectarians unwilling to follow the Scriptural calculus to its logical conclusions regarding Messiah and the Torah. What maintains the tradition is the widespread ignorance of most Christians and Jews, and the willfully malicious efforts of a few gatekeepers of tradition who know that the tradition protects their false presuppositions.

There are four periods of 70 years, but only one of them is the 70 year exile:

1. Rule of Babylon	Jer. 25:11
2. Exile	Jer. 29:10
3. 70 years anger	Zech. 1:7
4. 70 years fasting	Zech. 7:1

The first 70 year period pertains to the rule of Babylon over the nations. But since Babylon ruled the nations for only 66½ years between 605 and 539, it is obvious that these 70 years are incomplete. The traditionalists try to complete these 70 years by including 3½ years of the Persian dominion. They claim, contrary to all known regnal years of Cyrus that 536/535 was his first year. Once again, the interpretation is impossible. It questions the very justice of the Almighty. Jeremiah prophesied that Yahweh would "punish the king of Babylon and that nation, the land of the Chaldeans, for their iniquity, declares Yahweh, making the land and everlasting waste" (Jer. 25:11b). And this will happen "at the fullness of seventy years" (Jer. 25:11a).

It is quite clear that Persia was not guilty of the iniquity of Babylon against Judah and the nations. It is equally clear that Babylon did not fall when 70 years were fulfilled, but before. Thus if the 3½ year traditional extension into the Persian dominion is meant to complete the 70 years, then God is made into a liar, and also his prophet. For it says, "these nations shall serve the king of Babylon seventy years" (Jer. 25:11).

The traditional view requires the king of Babylon to be Cyrus at the end of 70 years. But Cyrus was not punished! Cyrus did not deserve to be punished. Therefore the attempt to complete the 70 years by adding 3½ years of Persian dominion is a complete contradiction of Scripture. Cyrus was not punished, and the city of Babylon did not become an everlasting desolation.

The real solution is prophetically enigmatic, and requires weighing carefully every word of Yahweh, but before getting to that, I must explain why the traditional view came about. It came about because certain parties only wanted Cyrus the Great identified as the prophetical Cyrus in Isaiah 44:26-28. These parties did not want to recognize that Cyrus was a throne name which applied to every king of Persia, particularly Artaxerxes I. They took their excuse from the customary use of a particular throne name for each Persian monarch, i.e. *Cyrus*, *Darius*, *Xerxes*, *Artaxerxes I*, *Darius II*, *Artaxerxes II*, etc. They then disallowed the use of the throne name *Cyrus* for Artaxerxes I and II. They then claimed that Daniel's seventy seven prophecy (Dan. 9:24-27) had to be announced by Cyrus the Great since a *Cyrus* was supposed to decree the rebuilding of the city and the temple (Isa. 44:26-28). They then reinterpreted Daniel 9 to be a 490 year period from the destruction of the first Temple to the destruction of the Second Temple. To do this they shortened subsequent Persian history by 164 years.[140] They ignored the fact that the decree was supposed to start the seventy sevens. The decree was not supposed to be given after the first 70 years. But it is already clear they could not be bothered with the apparent contradiction to minor details required by their system, whose real purpose was not to explain the scripture perfectly. The real reason for Rabbi Halaphta's *Seder Olam* chronology was to supplant and deny the truth its rightful place, namely that the prophetical *Cyrus* included Artaxerxes I, and that is when the Daniel 9 prophecy began! The ultimate motive is the war against Messiah Yeshua being waged by the Rabbis. Christians were naively sucked into key elements of this tradition. This includes the misidentification of the Cyrus, because Christians have themselves departed from Torah, and having done so, when they want some Torah information, they are forced to rely on Jews who reject Messiah Yeshua, who have forced biblical chronology into a procrustean bed to make sure that it can't be used to confirm that Yeshua is the Messiah!

Christians have since explained Daniel 9 in the rough, without its original accuracy, while still accepting the tradition that Cyrus the Great released the Jews. However, the Rabbis readily point out that Artaxerxes is not Cyrus according to the tradition they created in the first place. Christians facing this objection generally choose to keep the tradition and keep the inaccurate Messianic interpretations of Daniel 9. The reason is twofold. The other evidence for Yeshua are substantial, and secondly, coming to a precisely accurate computation of Daniel 9 requires knowledge of Torah that they do not have, since they have turned their backs on Torah. And the Rabbis are all too willing to give them the wrong information. Some of them know all too well that if the Christians had the right information that they would not only keep Torah, but that they would trust in Messiah Yeshua all the more. I only hope that Christians and Jews, who have both been deceived by their leadership should find both Messiah and Torah. For it is those who repent who will inherit the kingdom.

Now as I have indicated before 3½ years have been suspended till the future for the completion of Babylon's rule over the nations. The 70 years will be completed when they are completed according to what the Scripture says, and not the assumptions of the traditionalists, which have their origins in Jewish enmity against Yeshua, and swallowed by Christians due their stubborn neglect of God's law. The farther they are from His law, the less they trust the exact words of Scripture, and the more they come up with rationalizations why it does not mean what it says.

---

140 The actual number of years between Av 587 BC and Av AD 70 is 587+70-1 = 656. Halaphta's party held the temple was destroyed in AD 69. So we deduct one year resulting in 655 years. They also placed the destruction in a post Sabbatical year, which would be the 491st year of the prophecy. To justify the two figures requires the deletion of 164 years (655-491 = 164). They took these years out of Persian history.

The existence of two other 70 year periods is only derived from references to them in Zechariah, and they are computed from their end points. The first is the *anger* or *indignation* which reached 70 years in the 2nd year of Darius I (519 BC). This era backtracks to the beginning of the final siege of Jerusalem in the 9th year of Zedekiah (December 589 BC). The second is 70 years of fasting, which dates from the destruction of the Temple in 587 to the 4th year of Darius in 518 BC.

Darius the Mede

The identity of Darius the Mede has vexed scholars who have swallowed the tradition that Cyrus the Great ended the 70 year Babylonian exile and released the Jews. But the prophet Daniel does not follow the customary lead in assigning throne names. He calls the conqueror of Babylon Darius the Mede, and refers to his successor as Cyrus, usually styled Cambyses (Dan. 6:28). Daniel does this strategically to point out that the second Persian king would be the liberator of the Jews, and further that Cyrus is a throne name for all kings of Persia in keeping with the prophetical usage in Isaiah 44-45. It says about Darius:

> That very night Belshazzar the Chaldean king was killed. And Darius the Mede received[141] the kingdom, being about sixty-two years old (Dan. 5:30-31).

This is dated in October 539 BC. Now Daniel 9:1-2:

> In the first year of Darius the son of Ahasuerus, by descent a Mede, that *year* which he was made king over the realm of the Chaldeans--in the first year of his reign, I, Daniel, perceived in the books the number of years that, according to the word of the LORD to Jeremiah the prophet, must pass before the end of the desolations of Jerusalem, namely, seventy years (Daniel 9:1-2).

Now, without a doubt, this first year of Darius the Mede was over and done with before the seventy years dated from Daniel's exile. In fact an accession year was used, so the 1st year of Darius the Mede was spring 538 to spring 537. We know the usual style for him was Cyrus and his successor Cambyses. The Scripture styles him Darius the Mede, and his successor Cyrus (Daniel 6:28). Daniel's deviation from the customary throne names is possible precisely because all the names involved are throne names. Darius means "Holding firm the good", and is equivalent to the English throne title, "Defender of the faith"; Cyrus means "to bestow care" (Jan Tavernier), and answers to the scriptural translation shepherd or pastor (Isa. 44:28). An English throne name title analogous to this is "Supreme head", which has reference to the English monarch being head of the Church of England. Another title used similar to Cyrus would be Pastor General. Just one English monarch could be called Defender of the Faith, Supreme Head, and many other titles. The titles, of course, would be handed down to all the successors of the king, and even if one be specially chosen for business and correspondence, the other titles still existed. Writing economics probably dictated the customary use of one Persian title over another for each Persian king.

Darius the Mede (Cyrus the Great) was in fact descended from the Medes by his mother. He was also 62 years old (column J4-3601). On the night of his surprise attack on Babylon, Daniel was the third ruler over the kingdom, after Nabonidus and Belshazzar. Belshazzar was the coregent, and had been so for 15 years. Upon taking Babylon, Darius, king of lands, added Babylonia to his domain, and appointed his son as king of Babylon, whom Daniel styled Cyrus. Usually he was styled Cambyses.

Cambyses styled Cyrus was appointed coregent over Babylon by Cyrus the Great styled Darius the Mede, and his first year is the same as the first year of Cyrus the Great styled Darius the Mede over Babylonia. Cyrus the Great, styled Darius the Mede, was also styled "king of lands" and Cambyses styled Cyrus was also styled "king of Babylon." Tablet discoveries have shown that the regnal years of both the senior king and the coregent run exactly parallel.[142]

The chronology of Daniel is explained as follows:

```
605/604   Dan 1:1    Nebuchadnezzar
529       Dan 1:21   Cambyses styled Cyrus
603/602   Dan 2:1    Nebuchadnezzar
553/552   Dan 7:1    Belshazzar
551/550   Dan 8:1    Belshazzar
538/537   Dan 9:1    Cyrus styled Darius
536/535   Dan 10:1   Cambyses styled Cyrus
539       Dan 11:1   Cyrus styled Darius
```

Daniel 6:28, "So Daniel prospered during the reign of Darius and the reign of Cyrus the Persian." These reigns were concurrent because Cambyses styled Cyrus was coregent. They are two kings, but some traditionalists reason that that the second clause should be translated as an explanatory *waw*, "that is, the reign of Cyrus the Persian." From my many years of Hebrew study, I doubt very much that this *waw* can be legitimately called explanatory. The same have tried to justify the claim based on a similar *waw* in 1Chron. 15:26, wishing to equate Pul and Tiglathpileser. But this too is justified by Thiele's errant chronology! The Hebrew in that verse is decidedly against that assumption.

Daniel was the third ruler in the kingdom at the end of the Neo-Babylonian Empire. He was given equal authority under Darius the Mede (Dan. 6:1-3). If Darius the Mede were not the same person as Cyrus the Great, then it can hardly be said that Daniel had prospered. For him, it would have been a demotion of the most serious kind, to become the high official of a local satrap such as Gubaru or Ugbaru. He was under the king and his son alone, as third ruler in the kingdom, and therefore received no demotion.

In Daniel 11:1 it says, "In the first year of Darius the Mede, I stood up to confirm and strengthen him...behold three more kings shall arise in Persia, and the fourth shall be far richer than all of them...he shall stir up all against the kingdom of Greece." The text here speaks of legitimate kings. They are:

1. Cyrus styled Darius the Mede
2. Cambyses styled Cyrus
3. Darius I
4. Xerxes styled Ahasuerus

The texts says "three more" because the first was already ruling. The Messenger of Yahweh did not overthrow Belshazzar and then confirm some minor ruler over Babylon. He confirmed Cyrus the Great, styled Darius the Mede by Daniel.

141 He received the kingdom from the Almighty, who had decreed it (Dan. 5:18-28). Also in Daniel 9:1, "was made king" refers to the Almighty as the king maker. Darius the Mede and Cyrus the Great are the same person. Both were 62 at the fall of Babylon, which may be computed from data provided by the Greek historian Dinon preserved by Cicero (*De Divinatione* 1.23.46).

142 "Cyrus-Cambyses Coregency," Stefan Zawadzki," *Revue d'Assyriologie et d'Archéologie Orientale,* 90e Volume, No. 2 (1996), pp. 171-183

So to conclude, Darius the Mede is the same as Cyrus the Great, and Cyrus in Daniel is the same as Cambyses. Finally, the fact that the 70 years exile come out exactly on the first year of Cambyses styled Cyrus meets all of our expectations for the exile. Darius the Mede styled Cyrus the Great had his first year in 538/537 (after his accession year). His son Cambyses, styled Cyrus, had his first year in the same year. There is no evidence of any Cyrus having a first year in 536/535, who at the same time can say Yahweh "has given me all the kingdoms of the earth" (Ezra 1:2). The end of the 70 years and the first year of Cambyses styled Cyrus only meet in 529/528 BC. This must be so, given that it is the most parsimonious explanation, and that the contrary explanation is ultimately derived from seeking to suppress the application of the *surname* Cyrus (cf. Isa. 45:4, kjv) to Artaxerxes I, i.e. the Jewish suppression of Daniel 9.

Cambyses styled Cyrus fell victim to this nefarious desire by an initial stratagem of proposing a short reign of Darius the Mede from 539-535, and then putting in Cyrus in 535. This scheme, however is refuted by Daniel 11:1-2. For then one would be compelled to count *four more* kings after Darius the Mede: a Cyrus, Cambyses, Darius, and Xerxes, and then make Xerxes the 5th king (counting from Darius the Mede). Rabbi Halaphta escaped scrutiny on this because of contemporary ignorance of the kings of Persia. The Hebrew does not agree with the enumeration: 1, 1,2,3, 4. "Three *more* kings" implies counting in addition to one previous (Darius the Mede), thus 2, 3, 4, and "the fourth" implies reference to one already counted. It does not say "a fourth" as an addition to the 1,1,2,3. The Hebrew says "And the fourth..." (Dan. 11:2): 1, 2-1 *more*, 3-2 *more*, 4-3 *more*. In any case, if Scripture mentions the regnal year of a king, then we can be sure that history outside Scripture will stand behind the accuracy of the dating. For we have seen that Scripture avoids using any dates from Egypt or Assyria because they are corrupt and not absolutely known on an independent basis. History does not supply 535 as the first year of Darius the Mede's, successor. It supplies a 1st year of Cambyses styled Cyrus as coregent, and a 1st year as to his sole reign. Neither are in 535. And strangely, it seems, that archaeologists findings confirm datings vouchsafed by Scripture.

The whole contrary theory is based on 1. disregarding Persian history vouchsafed by the Scripture, and 2. Denial of the surname Cyrus to any king except Cyrus the Great. And then force fitting Daniel 9 to this Cyrus. Christians, thankfully skipped the last step of the error, but they have inherited the dregs that were part of the foundation of that error as tradition.

Review of the Exile

The Exile begins with the completion of the 70th broken sacred year, and the 40th year of Judah's sin. This is in the year of the world 3542, 598/97 B.C. There were three defeats of Judah, and at least four deportations. The first deportation was of Daniel and his companions in the 3rd year of Jehoiakim (3535). The second deportation was the most important: King Jehoiachin was taken to Babylon. The third was at the destruction of the Temple in **587 B.C.** The book of Ezekiel chronicles the years of the exile as the "exile of king Jehoiachin," which corresponds to the middle deportation. Likewise, Jeremiah 29:10 assigns the 70-year exile to the deportees from **597 B.C.**[143]

The solution to the 70-years requires recognizing several **70**-year periods. The first **70**-year period is the Babylonian Hegemony over Israel. This period began in **605 B.C.** and continued until **539 B.C.**, when it was suspended after 66½[144] years. Babylon will rule the remaining **3 ½** years (**42** months) when the Anti-Messiah rules the world at the end of days. This period is charted beginning in 3535 and suspends in 3601 (**1** … **66**). It is renewed at the end of days, provisionally indicated at the end of the charts. This mystery is further reinforced by Nebuchadnezzar's madness. The number of days of his madness may correspond to the number of years that Babylon slumbers.

Before returning to the 70-year exile, two other periods must be mentioned. Seventy years are mentioned in Zechariah 1:12. These 70 years are called the "indignation," or "anger," and they begin in the 9th year of Zedekiah. They end with the 2nd year of Darius. In the 9th year of Zedekiah, Nebuchadnezzar began his final siege at Jerusalem, which ended with the destruction of the Temple in **587 B.C.**[145]

Seventy years are also mentioned in Zechariah 7:1 and 7:5. These years pertain to the years of fastings since the destruction of the Temple.[146] The 1st year of the fasts is reckoned from 3553 (**587 B.C.**), and the 70th year ends with 3622 in the 4th year of Darius.

Now we return to the Babylonian servitude. Scholars have long confused the Babylonian hegemony 70 years with the Exile 70 years. Babylonian rule has been only 66½ years to date over Israel. Prior to **605** BC, Israel looked to Egypt. The defeat of the Assyrians in **609** does not mean that Babylon had consolidated its power over the Hatti-land. When Assyria was defeated, Egypt filled the vacuum until she was defeated at Carchemish in **605**. This leaves only 66½ years until **539 B.C.** when the Persians defeated the Babylonians, thus, suspending Babylonian hegemony.

The 70 year exile pertains to the exile of Judah in the *land* of Babylon. It does not *all* pertain to rule by Babylon. Part of the rule is made up by Persia. The usual solution is to extend the 66½ years to **70**, and claim that Judah returned in **536-535 B.C.** It is then assumed that somehow the 1st year of Cyrus falls in **535 B.C**. But, the assumptions are wrong, and so is the extension of the period.

143 Jeremiah's letter is addressed to the deportees from **597**.

144 Col. G2-3536 counts standard *Tishri* years, but the Babylonian Hegemony began in the spring of **605 B.C.,** ½ year before, after the battle of Carchemish. The four Tishri years in the end of days are only actually **3 ½** years or **42** months. Thus, the whole Babylonian Hegemony will be exactly **70** years.

145 The 19th year of Nebuchadnezzar, **587/586** B.C., *anno* 3553 is reckoned according to the non-accession method. This places the destruction of Jerusalem and the burning of the Temple in **587 B.C.**, in the month of Av. The 9th of Av is the first of 70 fasts during seventy years, ending in the 4th year of Darius, *anno* 3622. As the latter date is known precisely, it follows that the destruction was in **587 B.C.** and not **586 B.C.** It is not possible to obtain 70 fasts between **586 B.C.** and the 4th year of Darius, even if the 4th year of Darius is down-shifted six months to a Tishri basis, because the Prophecy in Zechariah 7:1-5 is dated in the 9th month. See H.F. Clinton, Sir Robert Anderson, and Donald J. Wiseman who confirm the **587** B.C. date.

146 The 9th of Av fast remembers the destruction of the Temple, and the Fast of Gedaliah on the 3rd of Tishri commemorates the murder of Gedaliah.

The period of exile is defined by Ezekiel by numbering the years of King Jehoiachin, and by Jeremiah 29:10 as referring to the second deportation in **597 B.C.** Furthermore, the end of the **430** (**390** + **40**) years of sin, and the termination of the **70**th broken sabbatical year, require the **70**-year exile to begin in **597**.

The termination point will then be *anno* **3612**, the **70**th year landing in the sabbatical year **7/35**, (**529/28**). This year is the **1**st year of Cambyses, who is titled Cyrus.[147] Isaiah prophesied that Cyrus would initiate the rebuilding of the Temple, and the city of Jerusalem, but then he goes on to say Cyrus would conquer Egypt.[148] Cyrus did conquer Egypt in **525 B.C.**, but he is usually styled as "Cambyses." The Isaiah prophecy also applies to the Cyrus who initiated the rebuilding of Jerusalem, Artaxerxes I.[149] The key is to recognize that "Cyrus" is merely a throne name for all the kings of Persia.

This solution also clears up the book of Daniel. Daniel refers to the Persian conqueror of Babylon as "Darius the Mede" whom historians know as Cyrus the Great. However, Daniel continued in office until the first year of Cyrus, by which he means Cambyses, in **529** B.C.

At the end of the **70**-year exile, in the **7**th month, at the end of the sabbatical year, in the **2**nd year of Cyrus (Cambyses), work on the Temple was begun.

Biblical Identifications of Persian Kings

Biblical Designation	Ptolemy's Canon
I Darius the Mede	Cyrus
II Cyrus	Cambyses
III Darius	Darius
IV Ahasuerus	Xerxes
V Artaxerxes	Artaxerxes
VI Darius	Darius
VII Artaxerxes	Artaxerxes

Events of Esther

The book of Esther takes place in the days of Ahasuerus also known as Xerxes. Ezra puts the Persian kings in order, and we can complete the list from Daniel's overlapping list. Nehemiah filling in the single reaming gap:

Reference	Scripture	Sec History
Dan 5:30	Belshazzar	Belshazzar
Dan 5:31[150]	Darius the Mede	Cyrus the Great
Ezra 1:1	Cyrus	Cambyses
Ezra 4:5	Darius	Darius I
Ezra 4:6	Ahasuerus	Xerxes
Ezra 4:7	Artaxerxes	Artaxerxes I
Neh 12:22[151]	Darius the Persian	Darius II
Ezra 7:1[152]	Artaxerxes	Artaxerxes II

Following the Ezra king list, the Biblical synchronism for Ahasuerus is observed to be with Xerxes from the secular king lists.

I have constructed the internal chronology of Esther following William H. Shea's excellent interweave of outside history using the dates in the book of Esther. There is one other end to tie up concerning the age of Mordecai, which has been posed as a problem by skeptics.

> Now in Shushan the palace there was a certain Jew, whose name was Mordecai, the son of Jair, the son of Shimei, the son of Kish, a Benjamite, who had been carried away from Jerusalem among the captives carried away with Jeconiah king of Judah, whom Nebuchadnezzar king of Babylon had carried away (Esther 2:5-6).

Shea writes:

> The problem with Mordecai's age depends on whether the subject of the verb in 2:6 is the first or the last name in the list. J.S. Wright has suggested on the basis of parallels from the syntax in II Chr 22:9 and Ezr 2:61 that the subject of the verb is the last name in the list, Kish, who was Mordecai's great-grandfather. This interpretation would make Mordecai's age quite comfortable with Xerxes' reign.[153]

Jewish Surnames

Some chronologists have proposed that the people named in Nehemiah 10:1-13 must be the same persons as in Nehemiah 12:1-7, because a good many of the names are identical or nearly identical, after accounting for spelling differences. In making this proposal they were under the influence of Rabbi Halaptha's procrustean *Seder Olam* heresy that shortened Persian history by 164 years to divert Daniel 9 away from Messiah Yeshua. They also did not follow the biblical match of Cyrus to Cambyses in the outside sources since they did not understand which 70 year period was the exile, and finally, they failed to recognize that the prophetical Cyrus in Isaiah 44-45 stands for several Persian kings and ultimately Messiah Yeshua himself. They surely recognized this last point, but failed to follow the lead of the Scriptural logic.

Since Zerubbabel was contemporary with the Nehemiah 12 list in 529 BC and Nehemiah contemporary with the Nehemiah 10 list in 445 BC, then it is plain that 84 years separate them.[154]

147 Cyrus is a throne name applied to the kings of Persia. It is derived from the Elamitic word for *shepherd.* Other examples of throne names: Pharaoh, Cesar, Czar, Shah, Sultan, Abimelech, Pasha. "Cyrus the Great," for example, "even called himself 'Artaxerxes'" (F.L. Jones 67, pg. 275). "Xerxes … calls himself … 'Darius' and 'Xerxes the Arta'" (Antsey 6, pp. 261-262).

148 Isaiah 44:28; 45:1, and 45:14, "Thus saith YHWH, The labour of Egypt, and merchandise of Ethiopia and of the Sabeans, men of stature, shall come over unto thee; in chains they shall come over, and they shall fall down unto thee."

149 Josephus calls this king *Cyrus*, "After the death of Xerxes, the kingdom came to be transferred to his son Cyrus, whom the Greeks Called Artaxerxes" (*Jos. Ant.* 68, 11.6.1 [184]). The footnote confirms this "We place this history under Artaxerxes Longimanus, as do both the Septuagint interpreters and Josephus" (pg. 298, note a). The bible refers to *Cyrus* as a 'surname' (KJV, Isaiah 45:4). Thus, we have it on biblical authority that Cyrus is not simply a personal name of one man, but the royal dynastic surname of the Persian kings.

150 Daniel's list extents to Cyrus in Dan. 6:28 (i.e. Cambyses) overlapping the first king of Ezra's list.

151 By means of the genealogies and high priestly succession, it is proved that Nehemiah's Darius the Persian places after Artaxerxes I in the book of Nehemiah.

152 By means of the high priestly succession in Ezra, it is demonstrated that Ezra went to Jerusalem during the tenure of the high priest Johanan, showing that Ezra skips from Artaxerxes I to Artaxerxes II in his list leaving a gap at Darius the Persian, which is filled in by Nehemiah's account.

153 William H. Shea, "Esther and History," Andrews University.

154 The actual figure they dealt with is 91 years because they believed the 70 years ended in 536/535 BC. The correct 84 year figure makes it much easier for the possibility of the odd individual whose personal name is given to actually have a long lived life spanning the gap.

Many have proceeded to revise the Persian history already vouchsafed by Scripture, to bring the two lists close enough in time to be the same persons. The siren call of this theory, however, leads to a certain shipwreck of biblical chronology.

Notice the list of priestly families that returned with Zerubbabel in the Nehemiah 12 text below, and then compare it with Nehemiah 10:

> 1 Now these *are* the priests and the Levites that went up with Zerubbabel the son of Shealtiel, and Jeshua: Seraiah, Jeremiah, Ezra, 2 Amariah, Malluch, Hattush, 3 Shechaniah, Rehum, Meremoth, 4 Iddo, Ginnetho, Abijah, 5 Miamin, Maadiah, Bilgah, 6 Shemaiah, and Joiarib, Jedaiah, 7 Sallu, Amok, Hilkiah, Jedaiah.

Many of these names are repeated in the same order in Nehemiah 10, which comes 84 years later. Does this mean that the chronology is wrong because the same persons could not be all alive 84 years later?

Now notice that 20 of the names listed in 12:1-7 are all repeated in 12:12-21. Why are the same names repeated several verses later? They are repeated, because they are family names, and when they are repeated, they are each repeated associated with a personal name of the man that was head of that family during the priesthood of Joiakim. The corresponding names are color coded for easier matching. The following verses contain the same list, only this time a personal name is associated with each family name as the representative of that family during the priesthood of Joiakim. The compact language is unpacked "of X, Y" = The personal head of the X family is the leader whose personal name is Y."

> Nehemiah 12:10 And Jeshua begat Joiakim, Joiakim also begat Eliashib, and Eliashib begat Joiada, 12:11 And Joiada begat Jonathan, and Jonathan begat Jaddua. 12:12 And in the days of Joiakim were priests, the chief of the fathers:[155] of Seraiah, Meraiah; of Jeremiah, Hananiah; 12:13 Of Ezra, Meshullam; of Amariah, Jehohanan; 12:14 Of Melicu, Jonathan; of Shebaniah, Joseph; 12:15 Of Harim, Adna; of Meraioth, Helkai; 12:16 Of Iddo, Zechariah; of Ginnethon, Meshullam; 12:17 Of Abijah, Zichri; of Miniamin, of Moadiah, Piltai; 12:18 Of Bilgah, Shammua; of Shemaiah, Jehonathan; 12:19 And of Joiarib, Mattenai; of Jedaiah, Uzzi; 12:20 Of Sallai, Kallai; of Amok, Eber; 12:21 Of Hilkiah, Hashabiah; of Jedaiah, Nethaneel.

Not many have noticed the obvious solution. All the names except for personal names, which do not occur in both lists (Nehemiah 10 and 12), are family names. This proves that the time separation of the two lists required by Persian chronology is correct. Since they are family names, there is no need to revise Persian history. Such is the case with every name that is similar to every other name where they are chronologically too far separated to be the same persons. Nehemiah 12:10-21 proves that family names were used so frequently that a special list of personal names contemporary with one high priest Joiakim was required to identify the individual heading up each family! This would demonstrate then that personal names in the lists are not the rule. They are the exception. The recurrence of names like Nehemiah and Ezra in Zerubbabel's list of returnees only shows that we are dealing with family names, and not the same individuals, or even supposing some of the names are personal, then they were the names of two different people.

I believe this situation is simply another Scriptural cipher to be decoded. And the key is in Neh. 12:10-21, and in noticing other details where persons cannot be the same. For instance the Mordecai in Neh. 7:7 cannot be the Mordecai in the book of Esther, since Zerubbabel returned before the events of Esther happened. The ciphers are in Scripture so that the faithful must ask the Almighty for the answer, and he will answer those willing to obey him. To unlock the cipher requires a prayerful and obedient relationship with Messiah Yeshua. And this concerns Messianic prophesy also. The Holy Spirit will unlock enough answers for the seeker for a trusting relationship, however, due to sin, we may not be ready for some things to be unlocked, and so the answers we receive will be according to our faithfulness. If we witness and confirm others unlocking them, then will we embrace them with sincere repentance or become jealous of their blessing? He who holds fast and seeks will be given more. He who does not hold firm and seek, even what he has will be taken from him.

The Work of Ezra The Scribe

A more recent book of mine goes into Ezra more extensively, but I offer this brief note. Ezra the scribe as a younger man read the Torah in Jerusalem under the administration of Nehemiah, but later he went back to Persia to raise support for the community in Jerusalem. While there his work came to the notice of Artaxerxes II, who appointed him to take the next administrative term as governor after the Persian governor that followed Nehemiah had ruled badly.

In order to understand the work of Ezra, "the scribe," not of the Ezra Family, but from the line of Seriah. in **397-396 BC,** we must reconstruct what happened prior to his arrival in Jerusalem. Nehemiah returned to Persia at the end of a twelve year term (**432 BC**). In his absence Eliashib compromised the temple (Neh. 13:7), and when Nehemiah returned, evidently with authority, he corrected the problem. He found out that Joiada, the son of Eliashib had given a son in marriage to Sanballat. So Nehemiah banished Joiada (Neh. 13:28), or his son, or both. After that then Darius the Persian (Darius II Nothus) became king of Persia in **424 B.C.** A "lord Bagoas" was made "governor of Judah"[156] Meanwhile, Jonathan, son of Joiada, son of Eliashib, had become the high priest ca**. 410 B.C.**[157] Josephus fills in the blank between Nehemiah and Ezra:

> (297) "When Eliasib [SIC] the high priest was dead, his son Judas[158] succeeded in the high priesthood: and when he was dead, his son John[159] took that dignity; on whose account it was also that Bagoses[160], the general of another Artaxerxes' army[161], polluted the

ual whose personal name is given to actually have a long lived life spanning the gap.

155 The phrase "chief of the fathers" means the clan representative.

156 ANET 98, pg. 492.

157 ANET (ibib.).

158 Apparently the son of Eliashib that replaced Joiada after Nehemiah banished him.

159 The same as Jonathan.

160 The Elephantine papyri makes him the "governor of Judah" (ANET, ibid.).

161 The Elephantine papyri make it clear that Bagoses was governor of Judah in **407 B.C.** during the **17**th year of Darius II Nothus. Artaxerxes was a throne name, but Bagoses may have remained governor until the **7**th year of Artaxerxes II. The argument over

temple, and imposed tributes on the Jews, that out of the public stock, before they offered daily sacrifices, they should pay for every lamb fifty shekels.[162] (298) Now Jesus was the brother of John, and was a friend of Bagoses, who had promised to procure him the high priesthood. (299) In confidence of whose support, Jesus quarreled with John in the temple, and so provoked his brother, that in his anger his brother slew him."[163]

This slaying was justified because it was in self defense. The Persian governor was unable to unseat Jonathan (John) from the high priesthood, but he mistreated the Jews for seven years.[164] In particular the 50 shekel tax on the temple offerings made operation of the temple difficult, if not impossible. One of the particulars in Artaxerxes' (II) decree was that this tax be rescinded with a very severe penalty for violators:

Ezra 7:24, "Also we certify you, that touching any of the priests and Levites, singers, porters, Nethinims, or ministers of this house of God, it shall not be lawful to impose toll, **tribute,** or custom, upon them. … 7:26 And whosoever will not do the law of thy God, and the law of the king, let judgment be executed speedily upon him, whether *it be* unto death, or to banishment, or to confiscation of goods, or to imprisonment."

Therefore, it was **49** years from the building of the walls till the time that the Jews were again allowed to freely practice the Torah when Ezra returned from his stay in Persia after being appointed to the governorship of Judea. Ezra's public career had begun when he was called to read the Torah in 445 BC, and then he went back to Persia to raise support. While there he came to the notice of Artaxerxes II and was appointed the new governor to replace Bagoses.

---

the term "general" is simply a translational variation, and has no merit toward confusing Bagoses with another later famous Bagoses.

162 About 500 grams of Silver (*New Bible Dictionary*).

163 Ant. (68) 11.7.1.

164 Perhaps the first seven years of Artaxerxes II (405-398).

Introduction to Daniel 9:24-27

The Daniel 9 section explains the chronology of the matter, however, as the interpretation of the text has been disputed, it is necessary to address some points to dispose of all the contrary positions. First my translation of the passage.

> Sevens—seventy are determined concerning your people, and concerning your holy city, to finish the transgression, to seal up sins, to wipe away iniquity, and to bring everlasting righteousness, and to complete *the* vision and prophecy, and to anoint *the* holy of holies.
>
> So know and understand, *that* from *the* going out of *a* word to return and to build Yerushalayim until *the* Anointed Prince, *shall be* sevens—seven, and sevens—sixty and two. They shall return back, and it shall have been built wide and fortified—even in *the* distress of the times".
>
> And after sixty and two sevens shall Messiah be cut off, but not for himself:

Firstly, the sevens are sabbatical periods or the sabbatical year itself. This is how the traditional Jewish chronology *Seder Olam* interprets the unit of time, and how *Seder Olam* calculates. The Jewish understanding of the *sevens* is not at fault. What is at fault is the Jewish attempt to rearrange history to steer the prophecy away from Messiah Yeshua.[165] A Sabbatical period is seven years, and the Sabbatical year itself is called a release or Shemittah in Hebrew, and also simply "year of the seven" (Deut. 15:9, שְׁנַת־הַשֶּׁבַע). What *sevens* means in Daniel 9, then, is Sabbatical years.

We must reject attempts to turn the *sevens* into 360 day years. This is a Christian version of shortening history to make the prophesy fit where otherwise it would not fit. And even with the 360 day year proposal, the prophesy still does not fit. They have to start it in the month of Adar contradicting Neh. 2:1. The 360 prophetical year was originally justified by Sir Robert Anderson's incorrect interpretation of Noah's flood chronology, which I have already dealt with, along with possible arguments from Revelation concerning 1260 days and 42 months.[166]

Also, we must consider the order of the prophecy. First there are seven sevens, and then sixty two sevens. The Jewish interpretation is that there are two anointed ones. One anointed comes at the end of seven sevens, and another, they say, is cut off after the sixty two sevens. This interpretation is not strictly necessary, however, it need not be rejected. The first anointed prince is Ezra who comes at the end of seven sevens to restore the temple service after Bagoses persecution. The second is Messiah Yeshua who died and rose again after the sixty two sevens. Whether or not Ezra is regarded as the first anointed, the Anointed Yeshua at the end of the sixty two sevens is required.

Several points are ignored by interpreters. First the seventieth seven is cut off (still future) from the first sixty nine. Not only does history require this, but the promise of everlasting righteousness for Jerusalem and Israel require it to still be future, as they are not now righteous. Because Israel and Jerusalem are mentioned as the concern of the prophecy, those who say that some short of spiritual or theological everlasting righteousness came already are in error. The prophesy refers to actual righteousness for Israel, and not a fictitious righteousness. This shows that calculations placing the 70th seven in the historical past are errors. Such views are called preterist.

Moreover, *atone for iniquity* is not just to forgive it. It also means to remove it completely:

> *to wipe away iniquity* : ולכפר. The the contextual use of the verb *kippur* clearly includes the sense of cleansing or expiation. The idea of "wipe away" unifies all the contexts and brings linguistic concordance to the sense of the word. "*On account of Akkadian b) to wipe off, to expiate has been suggested as original meaning of* כפר." (pg. 452, Baumgartner). Two things are to be considered, a. wiping out the penalty, and b. wiping out the contamination of sin itself, i.e. cleansing. For after 69 sevens, Messiah wipes away the penalty for the faithful, and at the end of the 70th seven he wipes away sin from Israel (cf. Zech. 3:9). This denies the preterist position.

Therefore the preterist positions must be rejected, and none of these, in fact, work, because they depend on the wrong order of placing Ezra first and Nehemiah second leaving the seven sevens unexplained and the priestly succession contradicted.

The original 360 day theory started in 445 BC and ended in AD 32. Its popular revised version begins in 444 BC and ends in AD 33. The preterist theories start in 458 BC or 457 BC, and place the crucifixion in the middle of the 70th Sabbatical period, where it is equated to Daniel 9:27, "he will cause the sacrifice and offering to cease." This midpoint is arranged to fall between AD 29 and AD 31, usually being targeted on AD 30 or 31. The preterist theory is a failure on two points. It requires the phrase calling for the end of the sacrifices in the middle of the seven to be spiritualized. No sacrifices actually ended when Messiah died. Secondly, the theology calling for the end of the sacrifices in conjunction with Messiah's death is built on a foundation of anti-biblical assumptions concerning the Temple and sacrificial system. If the sacrifices were better understood, then not only would Messiah's ultimate sacrifice be better comprehended, but the preterist theory's faulty foundations will be revealed.

Daniel 9:24-27

The Books

Daniel says that he understood from the "books" that the Babylonian exile would last 70 years.[167] He goes on to mention

165 They did this by changing the starting and ending points of the prophecy and deleting 164 years from Persian history.

166 1260 days is not 42 months because Revelation no where tells us to multiply 42 x 30, or to divide 1260 by 3½. Rather 1260 days is longer than 42 actual months consisting of 29 or 30 days, and averaging 29.5 days. 42 months is 1239 or 1240 days. The only way that 42 months can all be 30 days is if the month cycle as created by Yahweh is first rejected, and then another put in its place for which there is no evidence, except assumptions.

167 Daniel 9:2. Dated the 1st year of *Darius the Mede*. This was the Cyrus who conquered Babylon in October **539 B.C.** Daniel understood the matter in this year. He may have been hoping that the exile for him and his friends would end in **535 B.C.**; the prayer begun in 9:3 is probably a summary of his prayers up to this year on Yom Kippur. Daniel was to experience a "Great Disappointment," however, because the end of the Babylonian Hegemony was to be delayed to the end of days, and the exile was dated to Jehoiachin's exile. Daniel may not have known this until he read a copy of Ezekiel and Jeremiah. It may have taken several years for him to fully understand the 70 years.

Jeremiah, who wrote only one *book* touching on the subject of the 70 years. However, Daniel says he understood the matter from *books* (plural). Evidently, Jeremiah was not the only book. What was the other book?

While Chronicles does mention the sacred years in conjunction with the 70-year exile[168], it was not written at the time of Daniel. Chronicles was not written until after the 1st year of Cyrus (Cambyses) in 3611; it was completed much later by Ezra. The other book that Daniel is referring to, then, is not 2nd Chronicles. It is Leviticus. In this book, the connection is made between Israel's profanation of the sacred years and their exilic punishment.[169]

Perhaps also, Daniel read Ezekiel's prophecy, and calculated the sum of the 390 years and the 40 years;[170] if he added these two numbers to obtain **430**, and did some simple estimating, dividing by **7** and **49**, he would see that these **430** years would contain **70** sacred years.[171] If not, Leviticus 26:34 alone was probably enough to conclude that Israel's **70**-year exile was related to seventy sacred years, "Then shall the land enjoy her Sabbaths, as long as it lies desolate, and ye be in your enemies' land; even then shall the land rest, and enjoy here Sabbaths."

Are Discontinuous Eras with Gaps Possible?

It has been observed in the preceding sections that these 1 … 70 broken sacred years actually exist, being tallied during the years of Israel and Judah's rebellions. In addition, it is important to note that the series is discontinuous: Years 1-2 are followed by a **40**-year gap, which is filled by the judgeship of Othniel son of Kenaz, *anno* 2576- 2616. This judgeship is followed by years 3-5 and then a gap; 6-8; a gap; then 9 by itself; another gap; and 10-12; a gap, then 13-19; a gap, then 20-22; a gap, then 23-63; a gap, then 64-67; a gap; and 68 by itself; a final gap, then 69-70. This phenomenon illustrates the principle of the suspended era quite well. The era is suspended when Israel or Judah repents, but is renewed, picking up were it left off in the count when Israel returns to rebellion.[172]

How Seven Year Cycles Are Counted

It should also be noted that in the 8 years of the first oppression by Chushan (2568-2576) that there are two sacred years that were profaned. One might suppose that two sacred years requires a period of **14** years to fit into, since the 7th year comes only once every **7** years. However, seventh years are only separated by **6** normal years. Therefore, if one sacred year is at the start, and one at the end of **6** years, then **1+6+1 = 8**. Therefore, *n* sacred years may fit into a space less than might be indicated by straight multiplication by seven.[173]

Expression 1: $7n - 6$ = minimum years
e.g. $7 \times 2 - 6 = 8$
e.g. $7 \times 69 - 6 = 477$

Expression 2: maximum total years $\leq 7n + 6$
e.g. max $\leq 7 \times 69 + 6 = 489$.

Expression 3: (use when δ, the year no. of the 1st yr is known)

$7n - \delta + 1 \leq$ total years $\leq 7n + 6 + (1-\delta)$; $n = 69$, $\delta = 6$
$478 \leq$ total years ≤ 484.

For example, **69** seventh years would be **69** x **7** = **483** years, if one must count exact cycles. However, if one is only counting the seventh years,[174] then the **6** normal years can be chopped off one end. **483** – **6** = **477**, or **6** can be added to both ends: max = **489**. In the extreme case, **13** years could contain only **1**→ 7th year: **6 + 1 + 6 = 13**.

All these points, as the reader will come to learn, are exceedingly important in the interpretation and application of Daniel 9:24-27. The calculation of the prophecy is not in terms of days or continuous calendar years.[175] It is in terms of seventh year sabbaticals, which fully implement the biblical principles of inclusive counting. The counting of the 'sevens' that Israel did not keep shows gaps in the counting, and also shows that a seventh year is counted even when Israel did not rebel a full seven years for every seventh year they did not keep. This disproves the notion that 70 sevens must be gap free or must count a full seven years for every seven.

---

168 2nd Chronicles 36:21.

169 Leviticus 26:34, 26:43.

170 Ezekiel 4:5. This was revealed in *anno* 3547, well before the prophecy of Daniel 9. Ezekiel would have been a famous accredited prophet by the time Messiah spoke to Daniel, and his prophesy published. Daniel was a known political figure, and recognized prophet, so there is good reason to suppose Daniel knew of Ezekiel's work.

171 By estimation: **430** ÷ **49** = **8.77** Jubilee's; **430** ÷ **7** = **61.42** →7th-year sabbaticals. Add **8.77 + 61.42 = 70.19** total sacred year sabbaticals. In fact, the true numbers are 6 Jubilees, plus **64** →7th year sabbaticals, so that **6 + 64 = 70**.

172 This section justifies the gap in Daniel 9, between the 69th and 70th seven.

173 The span of time limits containing only $n \rightarrow 7^{th}$ years is: $7n - 6 \leq$ years $\leq 7n + 6$. If $n = 69$, then: $477 \leq$ years ≤ 489. If the starting point δ in the cycle is known (where $\delta \in \{1, 2, 3, 4, 5, 6,$ or $7\}$, the year no. of the cycle), then the limits are $7n - \delta + 1 \leq$ years $\leq 7n + 6 + (1-\delta)$. If it is known that a period contains **2**→7th years and that the first year is a 6th year, then **9** ≤ years ≤ **7** x **2** + **6** + (**1** – **6**) = **15**. This means that the period cannot be more than **15** years before it contains more than **2**→ 7th years. However, it must be at least **9** years long to contain **2**→ 7th years. If δ=4, n=2, then **11** ≤ years ≤ **17**.

174 In addition, *heptads* may be counted using the principle of inclusive counting. Since the decree was in the 6th year of a *heptad,* the whole heptad is counted inclusively as the 1st *seven*. In this case, *seven* means a *heptad*, and not the seventh years. Daniel 9:27 refers to a *heptad*.

175 Sir Robert Anderson, *The Coming Prince*, (5) tried to calculate in terms of days. His calculation ended in A.D. **32**, which is not astronomically viable for Passion Chronology. It also required reducing the actual year length for the period to **360** days, a chronological *non-sequitur reductio ad absurdum*, since it is known that the year was **365 ¼** days long. This was revised to end in A.D. **33**, but only at the expense of starting the prophecy in the month of Adar instead of the required Nisan, and still used the *reductio ad absurdum* **360**-day year. Others, who use **483** years, **365 ¼** days long, always end up with too many years, and are forced to move the historical dates of the rebuilding of Jerusalem, the Passion, or to ignore the rebuilding of Jerusalem altogether and propose Ezra coming to Jerusalem in **457 B.C.** as the starting point. Finally, they have to swallow the faulty preterist argument of Daniel 9:27.

The Text

The text begins, "Seventy Sevens are decreed for your people and for your holy city" (Dan. 9:24). A "seven" is the *seventh year*. Deut. 15:9 calls the seventh year: שְׁנַת־הַשֶּׁבַע, which is literally translated, *year of the seven*. *Seder Olam* regards the *sevens* as the sabbatical years. Some Jewish translations render the text *seventy septets*. Since the 70-year exile in Babylon was based on 70 broken sacred years, it is not surprising if the prophecy itself is in terms of 7th years.

The prophecy continues, "… to finish the transgression, and to make an end of sins, and to make reconciliation for iniquity, and to bring in everlasting righteousness, and to complete the vision and prophecy, and to anoint the most holy;" One key point here is, "to bring in everlasting righteousness" for Israel and Jerusalem. The seventy sevens will stretch all the way to the Messianic Kingdom following the *suspended era principle*. For only then will Israel and Jerusalem be blessed with *everlasting righteousness*.

"Know therefore and understand, that from the going forth of the command to return and build Jerusalem until Messiah the Prince, there shall be seven sevens and sixty two sevens." (Dan. 9:25).

The Decrees

1. **529 B.C.**, Ezra 1:1-6. Cyrus gives the initial return decree to rebuild the Temple as prophesied by Isaiah. The Jews are made afraid by their enemies to build during the stress of the times. Cambyses styled Cyrus invaded Egypt in **525 B.C.** Afterward the throne was usurped by Pseudo-Smerdis. But no decree was issued to cease building.
2. **520 B.C.** The prophets tell the Jewish leaders to begin building again. Darius I reissues the first decree (Ezra 6:1-12) and enforces it under pain of death for any enemy who interferes. After the completion of the Temple in **515 BC** they proceeded to rebuild the city itself, but without explicit authorization (Ezra 4:12). Their enemies accused them in the reign of Ahasuerus (Xerxes), but work went on because they could do nothing to stop the work, and after the death of Haman they had nothing to fear.
3. **446 B.C.** Ezra 4:17-23 (cf. vs. 23 & Nehemiah. 1:1-4). This decree was to stop the building "until a decree is issued by me" (Ezra 4:21). Given by Artaxerxes I. Judah's enemies are overzealous and destroy the progress on the work. The gates are burned, and the wall broken down (it took only 52 days to rebuild it).
4. **445 B.C.**, Nehemiah 2:1-8, 13, 17. To rebuild the walls of Jerusalem. Artaxerxes I gives Nehemiah a decree and letters to rebuild the city fulfilling his promise (Ezra 4:21).
5. **397 B.C.**, Ezra 7:7-28. To reform the people, teach the Torah, and restore the Temple to its proper function after much neglect, and to cancel the prohibitive taxes that were imposed by Judah's enemies, which included the previous Persian governor Bagoses' persecution. Given by Artaxerxes II. Ezra is the first anointed.

It may be pointed out that the Jews had every right to build the Temple and the city based on Cyrus' first decree, although it contained no commandment to build the city. However, Daniel 9:24 said that the counting of the "seventy sevens" would begin with a decree to rebuild the city. Only the decree of 445 B.C. qualifies as the fulfillment of the Daniel 9:25 criteria in so far as the 445 BC decree is followed by the seven sevens and the first anointed, Ezra.

The Seven Sevens

The seven sevens are the seven sabbatical years occurring between Nehemiah's rebuilding of Jerusalem and Ezra's coming to complete the reformation (F1-3695 to F1-3743). The first seven is counted inclusively, and the seventh sabbatical year falls in **402 B.C.** Ezra's reformation is finished just before the arrival of the 8th sabbatical year which 8th year is also the 1st sabbatical year of the sixty-two sevens. Ezra's coming to Jerusalem concisely establishes the meaning of the break between the seven-sevens and the sixty-two sevens in the prophecy. Ezra is the first anointed and Yeshua is the second Anointed Prince.

The command to rebuild Jerusalem was given in the 20th year of Cyrus styled Artaxerxes I in the year **3695.** Josephus also identifies Artaxerxes I as Cyrus.

> After the death of Xerxes, the kingdom came to be transferred to his son Cyrus, whom the Greeks called Artaxerxes (*Josephus Antiquities* 11:184).[176]

The command to rebuild Jerusalem was given in the 20th year of Cyrus (Isa. 44:28), who is known as Artaxerxes I in the year **3695**, (445 BC). The reign of this Cyrus is astronomically synchronized in the 11th year by VAT 5047.[177] The decree of the year **3695** is immediately followed by the seventh year: **7**. Seven of these Sabbatical years take us to the year **3737**. In the 7th year of Artaxerxes II, **3743**, Ezra went up to Jerusalem, completing reforms to put the Temple back in service in **3743**.[178] Therefore, from the decree to the end of the reforms is **3743** – **3695** + 1 = 49 years.[179]

The seven 7's, sixty two 7's, and one 7 sum up to seventy 7's. This shows that they do not run concurrently. They run consecutively. The purpose of the seven 7's is not to suggest a gap before the sixty two 7's, but to highlight Ezra's reforms, as the text puts these two in consecutive sequence. On the other hand, an undetermined gap is implied in the prophecy about the de-

176 Josephus is very mixed up on his Persian history, and which kings are which. Usually a mix up is engineered to a certain dogmatic end. However, in his styling Artaxerxes as Cyrus, there is no apparent motive for him to have tampered with his sources. Since he identifies this king with Esther's Ahasuerus, he has no reason to invent the style Cyrus for Artaxerxes. It would appear then to be due to his sources. However, Josephus himself is responsible for force fitting the book of Esther to Artaxerxes.

177 *Venus Astronomical Text* 5047. This is a tablet containing a diary of two lunar positions relative to planets and the positions of Mercury, Jupiter, Venus, and Saturn. The information is detailed enough to provide an unambiguous astronomical date via retro-calculation. The tablet is dated the **11**th year of Artaxerxes I, and the retro-calculation shows that this regnal year was **454 B.C.**

178 See "The chronological order of Ezra and Nehemiah," Rowley, H.H., pages 137-168. Also, Bullinger, 1888, explains the correct order of Ezra and Nehemiah.

179 Add **1** to obtain the inclusive count. For example, to count the numbers from **15** to **19**: **19 – 15 + 1 = 5** numbers: **15, 16, 17, 18,** and **19**.

struction of the city and temple between the sixty two 7's and the one 7.

The Sixty-Two Sevens

The *sixty-two sevens* begin counting right after Ezra's reforms. These are counted out in column F1-3745 to F1-4172. It will be seen that the final sabbatical year occurs just before AD 34 when Yeshua was crucified and rose from the dead. This reckoning is the exact solution to the Daniel 9 cipher. It is so mathematically precise that shifting the sabbatical year so much as one year would irreparably collapse biblical chronology into total ruin. If the reader is not mathematically inclined, then he or she can simply count out the sabbatical years in the charts and see that this is so.

The sixty two sevens come to AD 32/33 or if we add the seven sevens in also, then the 69th Sabbatical year is AD 32/33. The prophecy says that Messiah would be cut off after the 62 sevens. Therefore, the very next year is AD 34. This is when the crucifixion occurred.

The Birth of Messiah

"And when he began his ministry, Yeshua himself was about thirty years of age" (Luke 3:23), which Luke dates as the 15th year of Tiberius. There can be no doubt that Luke knew exactly how old Yeshua was at the start of his ministry. For he tells us that he investigated everything carefully. Luke says "about thirty years" because he means that Yeshua was almost, but not quite thirty. The qualification "about" is for the sake of accuracy. I say this because some chronologists are prone to allow Yeshua to be anywhere from 26 to 34 years of age. This is because they don't know how the chronology is supposed to go, and invariably their numbers simply don't work out without including large error factors in their interpretations.

Like the Neo-Babylonian dates previously used by Scripture, the Roman dates are vouchsafed by the fact that the Scripture uses them. A date that is not accurate is a meaningless date. The Scripture never says anything that is meaningless, so we may safely conclude on principle that all dates used by Scripture are sound and that the facts standing behind them are accurate. Presuming any other approach is simply to presuppose that we have the option to disbelieve the Scripture. And if there was a scribal error in any date, then it is up to the Almighty to to prevent it, or to fix it if one occurs.

Many claim that Tiberius held a co-regency with Augustus for two years because they need to adjust the 15th year backwards in order to make their mistaken chronologies of Yeshua's passion work. But there is no evidence of the claimed co-regency from any contemporary Roman or Greek author, nor for a long time afterward. There is no evidence that Tiberius was dated any other way save that which is handed down to us by the Roman historians. All the coins, documents, and other evidence we have supports only one way of dating Tiberius regnal years. And it does not include a coregency.

We can use the 15th year of Tiberius (AD 29) to find the year of Yeshua's birth. The phrase "about thirty years" is a comparison with the minimum age for Levitical service. The Levites were required to be 30 before entering the service of the Tabernacle (Num. 4:3). Moreover, as they would be immersed, so Yeshua was immersed, "to fulfill all righteousness" (Mat. 3:15) just before his 30th birthday. Likewise, John the Baptist, being a priest, would have reached his ordination age, which was 30, some six months before Yeshua reached age thirty. John, therefore, was ordained, and began preaching in the spring of AD 29.

Yeshua's 30th year began at the end of the 15th year of Tiberius Caesar (See J3-4168). This was A.D. 29. Going back 30 years puts his birth in 2 BC. As we shall see, Yeshua was born in the fall of this year, on the feast of trumpets (cf. Rev. 12:1-3).[180] In Luke 2:13, the angelic host of heaven shouts their praises to God in the night after the new moon day. Shortly after this the Word of God is presented at the feast of tabernacles, as John said, "The Word became flesh and tabernacled among us." It is often supposed that Yeshua was born on the feast of Tabernacles because of John's theological remark that the Word became flesh. I have explained elsewhere that this makes Miryam's pregnancy too long, almost 45 weeks. Further however, we have to consider the fact that the Word became flesh at His conception, and not at his birth. There is the detail that Joseph could find no room to stay in, which is a situation he would not encounter during the feast of Tabernacles, as enough of the Jews would be sleeping in booths to free up room for Miryam. The reason there was no room in Bethlehem was that this town was the prestigious ancestral home of perhaps up to three times its normal population. Rome's registration required Jews living elsewhere to register in the town they regarded as their home town.

The exact date of Messiah's birth is given a cryptic astronomical synchronism in Revelation. I say it is cryptic to everyone but astronomers. Revelation 12:1-3 gives a wondrous astronomical sign for the date of Yeshua's birth. It is a sign in heaven (cf. Genesis 1:14). The text speaks of a woman clothed in the sun with the moon under her feet. This sun-clothed woman with the moon under her feet is when the sun moved into the constellation of Virgo, and the moon was under its feet. The sun only moves into that part of the heavens in September and the moon under Virgo's feet restricts the timing even further.

This synchronism happened on August 31, 2 B.C., the new moon day for the 7th month, which is *Yom Teruah*.[181] This Revelation synchronism certainly refutes the winter Christmas tradition, and it has long been known from other details that the birth was in the fall, and not in the winter. The synchronism does not work out for every year. In fact, the new moon of Tishri 1 does not line up under the woman's feet in 3 BC or 4 BC. The year 2 BC gives the most precise line up according to the literal sense of the text. One can also construct a number of "crowns" using twelve stars around the head of Virgo. There are a sufficient number of magnitude 6 or less stars to do this.Since some are

180 i.e. Yom Teruah, day of shouting, or blowing.

181 Otherwise known as the *feast of trumpets*. This synchronism also validates the principle of using the new moon nearest to the spring equinox as the new moon for the first month, and not the Babylonian method of always selecting the new moon after the spring equinox.

bound to assert that Aug 31/Sept 1 is too early in the year for Tishri 1 because the day of the spring equinox comes one day after Nisan 15 by their calculations, I should add that this is only true of the definition of the equinox where the sun passes through right ascension 0. In fact, finding the moment that the sun crosses the equator (where δ=0) was not the usual means of determining the equinox. The usual means was to observe when the apparent sun sets in the west, which is a matter of simple observation, and requires no complex mathematics. Refraction lifts the sun by ½º, and this is sufficient to cause the apparent sun to pass through 270 degrees at sunset a day before the δ=0 definition of the equinox. And in 2 BC. the sun did pass 270º just before the final setting of the sun on Nisan 15. The Greeks liked to use the equatorial ring in Alexandria, but a few centuries later even Ptolemy did not trust it. The equatorial ring was bound to give inaccurate results at sunset on Nisan 15.[182] The observational method of observing the sun set due west sets the first month in 2 BC correctly so that the new moon of August 31 marks the seventh month.

After his birth, Miryam and Yosef stayed in Bethlehem. They moved into a house. The star of Bethlehem was Jupiter after leaving the great Venus-Jupiter conjunction, June 17th, 2 B.C. After leaving the conjunction, Jupiter is seen from Jerusalem as stopping over Bethlehem when it enters into retrograde motion on Dec 28, 2 B.C.[183] Jupiter "stood" from the apex of its retrograde motion on the new moon day, when the wise men worshiped the new king. Many have simply assumed that this standing point was on December 25th, however accurate calculations show that it is not!

After this, they fled to Egypt, and then Herod slew the children according to the time the wise men said the star first appeared (Yeshua was only 4 months old).

182 A least one person tried to propose (solely to invalidate 2 BC) that west should be determined by bisecting the winter solstice and summer solstice azimuth's at sunset at the location of Jerusalem. This yields a west azimuth close to 270.5º. However, the method of determination was invalid. The sunrise and sunset points should be bisected to find the north-south line. Then the west line is found perpendicular to the north-south line. This yields true west at 270º.

183 Ernest L. Martin, *The Birth of Christ Recalculated*; idem, "The Nativity and Herod's Death," CKC 85-92; idem, The Star That Astonished the World (2nd edition; Portland: ASK Publications, 1996); W.E. Filmer, "The Chronology of the Reign of Herod the Great," JTS 17 (1966): 283-298. Finegan, *The Handbook of Biblical Chronology*, revised edition, §500. Martin makes the claim for a December 25th retrograde turnaround of Jupiter in 2 BC. It may appear that the planet was stopped then, but December 25th is no more special than any other day which Jupiter appeared to be stopped. The precise stopping point is December 27th or 28th, and December 28th was the new moon day in 2 BC, a day that has ceremonial significance in Israel's worship of the Almighty. Martin also makes an invalid distinction between *paidon* and *brephos,* and he should have known better. Both terms may apply to an infant. Herod's slaying of children two and under was determined on how old he supposed the new king might be based on the movements of the star, and not on actual knowledge of how old Yeshua was.

The Crucifixion Year

Yeshua was immersed by John the Baptist in the 15th year of Tiberius Cesar in the year 4168.[184] (Tiberius succeeded Augustus Sept. 17th, AD 14 by decree of the Roman Senate. The Jewish new year was Sept. 14, AD 14, and, Augustus died August 19th, so the 1st year of Tiberius commences with the autumn new year for 4153. Yeshua was immersed by John toward the end of Tiberius' 15th year (AD 29), and accordingly the first Passover in John 2:13 was the spring of AD 30, anno 4169. This Passover was the 46th year since the completion of major work on the Temple (John 2:20). Building of the main outer structures commenced in the 19th year of Herod, 4120, and lasted 8 years.[185] The 46-year era began with the completion of the inner Temple in the 21st year of Herod, but work on the outer structures went on. Taking all of this into account means that the 46th year comes to Passover in the year 4169, AD 30.

Workings of the Hebrew Calendar

All the dates, times, and figures in Scripture are there to date important events in history, and to give a complete chronology. Of all the dates in the history of the world, there are two that stand above all others in importance. Therefore, I expect the the laws of the calendar to confirm those dates, and render them absolutely unique. I expect the rules implied by Torah to leave no loophole, and no possibility of questioning those dates short of rejecting the Word of Messiah himself, and His Torah. Since the Almighty put forth so many figures in Scripture upon which to establish true history and chronology, then it automatically follows that he would not neglect the most sacred and critical of all events; the death and resurrection of Messiah.

184 Richard Wellington Husband, "The Year of the Crucifixion", *Transactions and Proceedings of the American Philological Association* Vol. 46. (1915), pp. 5-27, writes "The Roman historians are unanimous in considering that the reign of Tiberius began with the death of Augustus, and not with the time at which special titles and functions were conferred upon him by the senate" (pg. 19). "Josephus and Philo adopt exactly the same method as the Roman historians" (pg. 20). "A careful examination of about 25 volumes of extant papyri from Egypt justifies the assertion that there is not the slightest hint in the whole mass that the reign of Tiberius was computed from any other time than 14 A.D." (pg. 21). He records an inscription "from Cyprus dated in the 31st year of the tribunician power, and the 16th year of the reign, of Tiberius" which "can be only 29 A.D." (pg. 23). Husband then debunks the undatable Sarmatia inscription, and proceeds to conclude "The opinion, therefore, that the verse of Luke, defining the time … refers to the year 26, is contrary to the view of the historians … contrary to opinion of the early church, is contrary to Josephus and Philo, is refuted by the evidence of the papyri and inscriptions, is not supported by the use of the word ἡγεμονία; … which renders conclusive evidence that the ministry of Jesus could not have begun until the year 29 at the earliest. Husband then concludes that it is impossible that the crucifixion could have occurred before the year 32 A.D. (pg. 27) based on the minimum time required for his ministry in the book of John.

185 The project was proposed in the 18th year, but it took some time to prepare the men and materials.

Yet, men have confused, and changed these rules. They have modified them to render them arbitrary so that no unique confirmation of the true dates of Messiah's Passion can be recovered. Furthermore, they have lied about the dates, and deceived the world concerning them, because they themselves are unwilling to live by the truths implied in those dates.

Therefore, I deem it utterly forbidden that any principle should be introduced by which the timing of Messiah's death and resurrection should be left open to doubt, whether due to outright deception or due to sheer incompetence. So it is now necessary to state those rules, and show how they are uniquely determined from Scripture, and then to show how scripture follows them.

We need to know the rules of the calendar in order to date the most important event in history: the death and resurrection of Messiah. We need to know the laws of the calendar so that men may not say to us that the date should be postponed a day, or postponed a month, so that they might argue for another day, because they are so motivated to do so because they have rejected the times and seasons of Scripture. And for those who are already disposed to accept the divine law, many of them need to be delivered from calendar ignorance, so that they may defend their position based on absolute historical timing, which is the backbone of absolute truth.

Rule 1: The month begins with the first visible crescent. Corollary A: if the sky is clouded on the 30th day of any month, the next day is automatically the 1st. Corollary B: if the sky is clouded two months in a row after the 29th day, then the first is made 30 days, and the second is made 29 days.

Traditionally this is by naked eye observation. If the old month already has 30 days, then observation is attempted, but is not needed. The scripture proves that visible observation is the basis of the new moon in Rev. 12:1-3. The moon under the feet in 2 BC was a visible crescent. Likewise, the proleptic new moon at creation is based on a visible crescent. Solomon began building the Temple on the first day of the week according to the visible crescent. Had he begun a day earlier, it would have been the Sabbath. Also David fled from Saul according to a visible new moon, as he arrived to ask for the old shew-bread on the Sabbath. Finally, the new moon is to be a sign for the month according to its light. For they are lights to give signs (Gen. 1:14).

Rule 2: The year begins when the sun sets due west 270º.

The sun was created to give the sign for years. This was confirmed by Yeshua's birth in 2 BC against all other definitions of when the year begins, and also by the synchronization of the year with the first day of creation. The primary year is not to be confused with other years only derived from the length of the primary year, i.e. lunar years, fiscal years, tax years, agricultural years, sabbatical years. We call these *years* because they are derived from the solar year, and have a similar length. Since they are derived from a solar year, the solar year must first determine the year before the derived year timings are known. The year is determined by a purely observational method, not by calculating the δ=0 equinox, or a mid solstice method, not by a mid time point between solstices. It is determined when the sun is visually seen to set due west. Yeshua's birth year uniquely confirms the observational method. The other methods deviate by a few days rendering the revealed chronology impossible.

Rule 3: The year may start no later than sunset on the 15th day of the first month.

This ensures that the second Passover offering commemorating the Exodus does not fall in the old year. Three pilgrim feasts are to be celebrated in each year, not four in some years and two in others (2Chron. 8:13; Exo. 23:14, 17; 34:23-24). The second offering on the 15th day, which commemorates the Exodus, is linked to the year: Exodus 13:10.

Rule 4: The year may start no earlier than sunset on the 15th day of the final month of the old year.[186]

The final month is Adar. If the year had 13 months, then it is an Adar II. If the year had 12 months then it is Adar I. This rule specifies that a month may not be bypassed in which Passover may have been celebrated according to rule 3. "You shall not delay to offer the first of your ripe fruits." (Exodus 22:29). These had to be offered after the Passover Sabbath (Lev. 23:11). This rule ultimately rests on the moral principle, "For I desire loving-kindness and not sacrifice" (Hos. 6:6). According to precept, the new crops could not be eaten until the day after Passover (Lev. 23:14). A delay of a whole month when Passover could have been celebrated in the new year the previous month only causes hardship to the poor who depend on picking the new grain (e.g. Mat. 12:1-7; Luke 6:1). An argument you may use with those who consider barley the sign is, if the searchers miss seeing ripe barley just before the new moon they determine to be Adar, then what if the barley ripens in the next two weeks? They they will have harmed the poor who are not allowed to eat it. On the other hand, it may be determined that the month is the first month as soon as the new moon is seen because the days of the old year only need be counted ahead to 365 or 366 to see if the new year will begin before or on the 15th.

Therefore: *Adar 15 ≤ year start ≤ Aviv 15*.[187] This rule is designed to ensure that Passover does not fall in the old year, and that it does not fall too late creating hardship. Let us now see how the Scripture holds to this rule hard and fast:

TD [188]	Began[189]	Year	Day	Occasion
I.1	I.1	4139 BC	1st	Creation
II.17	XIII.26	2483 BC	7th	Flood began
III.6	I.8	1632 BC	7th	Shavuot
IV.24	XII.29	1592 BC	1st	Long day[190]
I.4	XIII.17	1069 BC	7th	Shew-bread
II.2	XII.29	1019 BC	1st	Temple began
IV.5	XIII.25	593 BC	7th	Ezek 1:1
VI.5	I.6	592 BC	1st	Ezek 8:1
X.12	XII.21	588 BC	7th	Ezek 29:1
I.1	I.2	587 BC	7th	Ezek 26:1
I.7	I.2	587 BC	7th/eve	Ezek 30:20
VII.10	XIII.26	574 BC	7th/eve	Ezek 40:1
VII.1	I.15	2 BC	9/1[191]	Birth Messiah
I.14	I.12	34 AD	4th	Crucifixion
I.17	I.12	34 AD	7th	Resurrection
I.22	XIII.26	57 AD	7th	Acts 20:7

186 To state this more precisely, if the year begins simultaneously with sunset on the 15th, then that month must be the first. If the sun sets even a fraction of a degree south of 270º, then it will be the final month of the old year.

187 This rule agrees with the Rabbis determination of the year. However, they have the wrong date for the beginning of the year because they have not corrected their date using new observations since about the 3rd century AD. The rule also agrees in the rough with the Catholic determination of *Pascha,* which states that it occurs just after the first full moon after the spring equinox.

188 Text Date: The date referred to in scripture.

189 The lunar month and day on which the solar year began, that falls within the limits XII(I).15 at sunset ≤ year start ≤ I.15 at sunset.

190 The enemy strategically chose to attack on the Sabbath while the army of Israel was resting. Joshua marched all night and joined the battle on the first day of the week.

191 The Julian date of the synchronism in Rev. 12:1-3.

I have chosen dates here according to known weekday synchronisms derived from the texts. The list could easily be doubled according to the rules, but the extra cases are of no value in confirming the equinox rules, since they require the rule to be determined, and thus using them would be begging the question.

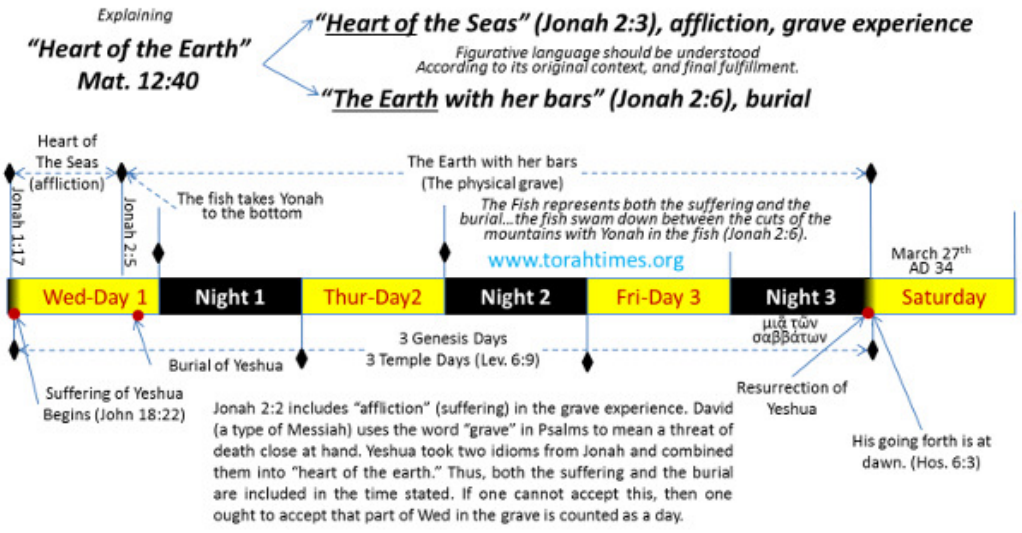
All of the cases begin the year between sunset Adar 15 and sunset Aviv 15. This date range for the start of the new year is required 1. So that three feasts fall in each year, and 2. Access to the new crops is not delayed created hardship.

Now having the rules in hand, and having them confirmed, we may proceed to give the dates for Messiah's death and resurrection.

The Date of the Crucifixion

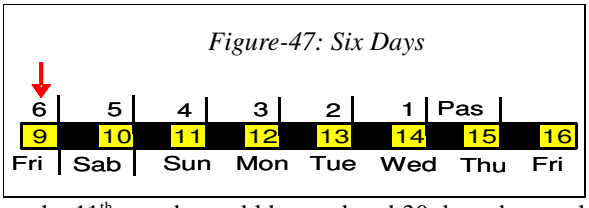
Daniel 9 has led up up to AD 34. Now in AD 34 the new moon was seen on March 10 with an arc of light 20º 49', which value renders the new moon very very easily visible. On the preceding day, March 9, the arc of light was 6º 3', a value universally regarded as making visibility impossible. How do we know that the skies were not clouded for all observers on March 10th leading to a postponement of the month by one day? Firstly, it is probable that Adar was already on the 30th day on March 10th. With clear skies the new moon of Adar would have been seen on February 8 with an arc of light at 11º 45'. In that case, it would not matter if the skies were clouded on March 10th. The first day of the month would be declared in any case, since the preceding month was already 30 days.

Figure-46: Heart of the Earth



Therefore, Aviv 1 would come on time despite clouds on the 30th of Adar. If we suppose that the skies were clouded over also on February 8, so that the new moon of Adar would not be visible, then the 11th month would be rendered 30 days due to clouded skies. So how long would Adar be if the skies were clouded on the 29th day when visibility was expected? The customary rule here was to make Adar 29 days. For in the cases of two months in a row of clouded skies, the rule was to alternate 30 and 29 days months. In that case, then, Aviv 1 would still come when it was supposed to come. If they perchance did not, then the moon would be almost 35º from the sun, which would seriously be out of alignment for a first visibility condition!

Figure-47: Six Days



In order to budge Aviv 1 forward from its calculated time, therefore, requires a virtual comedy of errors. It requires clouds during two new moon observations. It requires the sensible rule of alternation to be ignored. That such happened is a purely arbitrary assumption. We may suggest that the Almighty watched over such an important date in history, and made sure that the moon was seen when it was visible by making sure that some of the witnesses had clear skies on either for either Adar or Aviv, or that proper alternation rules were followed. We may go even a step further, and suppose that the skies were clouded at the start of month XI, so that the new moon was only seen on Jan 11 instead of the 10th. Then presume that it was not seen on Feb 8th (putative XI.28), but was seen on XI.29 (Feb. 9). In such a case Adar would be 29 days old when March 10 came around, which suppose was clouded, so that the moon was seen on the 11th. This requires clouds obscuring XI.1, clouds on XI.28 concealing the new moon plainly visible on Feb 28, and clouds on XII.29 concealing the new moon. Only when the clouds are strategically placed three months in a row can the rules be overcome. Would the Almighty allow such a scenario to transpire and remove the witness of the heavens for the most important date in history? Dare we presume that He does not care? We dare not.

Now there is an additional witness. John says that Yeshua went from Ephraim to Bethany six days before the Passover, and that they made him a meal, and that he was waited on (John 11:54-12:2; Figure-47: Six Days). It is very unlikely that this journey was on the Sabbath, and further unlikely that supper was made on the Sabbath, and even further unlikely that Yeshua allowed himself to be waited on on the Sabbath. Yet, if the new moon was on March 11th the events of John 12:1-2 would have to be on the Sabbath. March 11th was a Thursday, and that would make the first day of the month Friday, and the 15th of the month Friday. Counting back six days before we count down, 14th, 13th, 12th, 11th, 10th, 9th. And behold, the 9th day would fall on the Sabbath at March 20th. So this additionally shows that the month could not have been postponed a day.

So all roads lead to the crucifixion on 14 Aviv, AD 34, which was a Wednesday that year. No the month cannot be postponed, as it would break the Torah. And furthermore, it cannot be postponed for the very reason just mentioned. In the second month, the 9th day does come on the Sabbath. Sir Isaac Newton, Joseph Scaliger, and Solomon Zeitlin all came up with AD 34. However, Newton and Scaliger postponed the year to month II, and landed I.15 on a Friday. But to get there they had to break Torah: the poor in Israel would be left under a prohibition of eating the new crop violating the command not to delay offering the crop, and violating the law of loving-kindness.

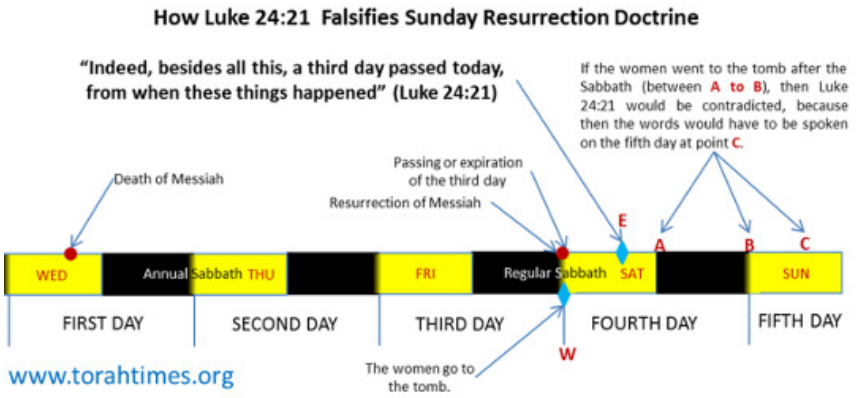
Matthew 12:40

The reader may refer to the chart at the beginning of this book, where "three days and three nights" are shown (Figure 1:

Passion Chronology Chart). A careful ready of Jonah and the Psalms concerning the use of the term "grave" will reveal that the concept includes the notion of suffering and the threat of death as well as actual death and burial. So fully 72 hours are attainable between the dawn of Aviv 14 and the dawn of Aviv 17 (See Figure-46: Heart of the Earth).

Some may not be comfortable with that interpretation, however, so I urge them to consider that the days and nights are counted inclusively. That is that the first day is the small part of a day in which Yeshua was interred in the grave. The principle is illustrated by the three years in 2Chron. 11:17 between **3157** and **3159** at the outset of the divided kingdom. Also three years are counted as a part, a whole, and a part during the siege of Samaria, from **3418** to **3420**. The principle is used numerous times during the reigns of the kings of Israel: Jeroboam I, 22nd year, and Nadab's 1st year in **3178,** and so on. It is also used for the 70 years of exile, as we see that Judah was back in the land before 365 days of the 70th year were completed.

Figure 48



Inclusive counting can never be used to reduce the number of day or night segments below the stated number. There still have to be three of each even if some of them are parts. The parts have to be separated from each other. A single night segment cannot be counted as two nights.

Mathew 28:1

"On the later of the Sabbaths,[192] at the dawning of the first of the Sabbaths...." The later Sabbath was the second Sabbath in Passover week after the annual Sabbath. Now this Sabbath was also called the "first of the Sabbaths" due to the fact that seven Sabbaths were counted after Passover leading up to the feast of Shavuot as directed in Lev. 23:15.

Leviticus 23:11-16

> And he shall wave the sheaf before Yahweh for you to be accepted; in the day after the sabbath the priest shall wave it...You shall also count for yourselves in the day after the sabbath, from the day when you brought in the sheaf of the wave offering; there shall be seven complete Sabbaths, until in the day after the seventh Sabbath you are counting a fiftieth day; then you shall present a new grain offering to Yahweh.

In the day after the Sabbath means the 16th of the 1st month in the day after the annual Passover Sabbath,[193] which in the year of the crucifixion fell on a Friday. Since days for sacrificial offerings are from dawn to dawn, the wave sheaf offering finished its burning on the altar toward dawn on the weekly Sabbath (cf. Lev. 6:9-10). The end of the offering synchronizes with Yeshua's resurrection.

In the day after the Sabbath also means the time period after the annual Sabbath leading up to the feast of Shavuot. Or we may render it "in the tomorrow of the Sabbath," which is a true Hebraic idiom for saying later or after. Seven Sabbaths are counted in the time after the Passover Sabbath. As such the word "day" contained in the compound *mimaharat* means "time after" and not strictly speaking the very day after. The interpretation is rendered certain by the direction to count seven Sabbaths "in the tomorrow of the Sabbath," which may not be accomplished in a single day. This may be compared with usages such as day of Yahweh and other cases where *day* simply means time.

Luke 24:21

> But we were hoping that it was He who was going to redeem Israel. Indeed, besides all this, a third day passed today from when these things happened.[194]

The third day ended at dawn on the Sabbath according to the timing of three days for sacrificial offerings. These disciples were too quick to disbelieve the report of the women, which pertained to a time within the three days. After the time expired, it was the fourth day, and so they exclaim that the third day had passed by them later that Sabbath day. Refer to Figure 48.

Their objection makes no sense in a Friday to Sunday context, where three days have been smashed into less than 42 hours. The obvious answer to the objection, then, is why they didn't wait to the end of three full days before making the objection. But for chronological reasons the Catholic scribes were compelled to change their Greek texts so that they read, "it is the third day" (NAS), or "today is the third day" (KJV), so that at least it would agree with their chronology. But by doing so they rendered the objection moot.

Luke 24:21 is often raised as an objection to a Wednesday crucifixion and a Sabbath resurrection by the Catholics. And it would indeed be a valid objection if one held that the resurrection was late Sabbath afternoon or exactly at sunset. For then the women would have to go to the tomb on Sunday morning, and

192 Literally, "And the late [one] of the Sabbaths." Technical detains are in the *Resurrection Day* book.

193 This interpretation of rendered certain by four witnesses. The first is that the first Shavuot fell on the Sabbath day. The second is that the sheaf was waved after the second Passover offering mentioned in Joshua 5:11. That year was 1592 BC, and the days fall such that it was not the first day of the week. The third witness is this view agrees with that of the Pharisees, and they were held to be right over the Sadducees (cf. Mat. 23:1-3). The fourth witness is that Yeshua's disciples ate the new grain on the second first Sabbath (Luke 6:1), which is merely another name for the first weekly Sabbath after Passover.

194 According to Codex Bezae, Old Syriac C, Old Syriac S, Peshitta, and other witneses.

the remark made by the two disciples would have to occur later that day, which would be day five.

John 20:1

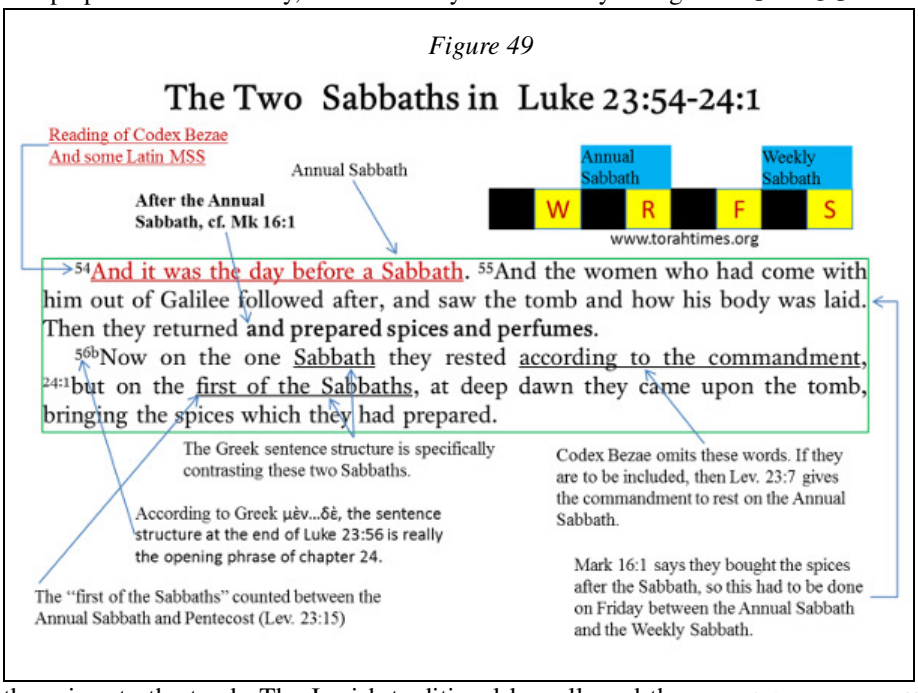
"And on the first of the Sabbaths, Mary Magdalene came early to the tomb, while it was still dark." The first Sabbath is explained according to Lev. 23:15. Notice here that John leaves no time for an additional day at the end of the third night. He says it is still dark. In fact, it is so dark that it is too dark to properly recognize another person. Mary supposed that he was the gardener, and that he had directed the two angels, who appeared as men, to remove the body. For it would not be impossible that an order had been given by Pilate or some other authority to remove the body, and that the gardener had been roused to lead them to the part of the garden with the grave. Such a removal of the body would surely violate Sabbath traditions for care of the dead, but then the law had been broken by the authorities who crucified him from the start right when the Passover was being slain, so it is not surprising that Mary would be under the influence of conspiratorial thinking that Sabbath morning.

Mark 16:1-2

> And when the Sabbath was over, Mary Magdalene, and Mary the mother of James, and Salome, bought spices, that they might come and anoint Him, and early in the morning of the first of the Sabbaths, they come unto the tomb, as the sun rose.

First there was the annual Sabbath, beginning at sunset on Wednesday. Then on the next day, Friday, they bought the spices and prepared them. Finally, on the weekly Sabbath they brought the spices to the tomb. The Jewish traditional law allowed them to perform these last rites on the third day, the last day on which it would be possible to tend the dead, and make sure everything was just so before the grave had to be sealed until decay took its course. Naturally, the traditional view has great difficulty with "after the Sabbath" here, since it would only be some 25 hours after the burial, and Joseph and Nicodemus would have already embalmed the body, or would be about to. What need was there for sweet smelling spices in such a rush? They would have known they had all day Sunday to buy spices, etc. So why rush out in the dark after Sabbath ended to try to find a merchant of spices? I don't know how they answer that. But the truth is that they were appointed or appointed themselves to do the last perfuming rites at the very last moment at the end of the third day. And that happened when the third day actually came to and end, three full days after the first cuts and bruises landed on Messiah's person.

Figure 49



Luke 23:54-24:1

The Greek structure shows that the chapter division must go in the middle of the Luke 23:56. This is because the second half of the verse is one coordinated sentence with Luke 24:1. Refer to Figure 49. This is shown in J.P. Green's Interlinear Bible and explained in the *Concordia Commentary* by Arthur Just.This proper chapter division is of critical importance to the chronology. In 23:54, the annual Sabbath on Thursday that year is referenced. Then 23:56a tells us that they prepared spices. The initial verse of the next chapter (23:56b-24:1) fills in the detail that they rested on the annual sabbath, but then brought the spices on the first of the Sabbaths after the annual sabbath. Necessarily then the spices were prepared on Friday between the two Sabbaths. Mark 16:1 gives us explicit confirmation that the spices were bought after the annual Sabbath.

Now Codex Bezae omits the words "according to the commandment" which most suppose would reference the 7th day Sabbath, however, even if Codex Bezae's omission is incorrect, there is still a commandment to rest on the annual Passover Sabbath found in Lev. 23:7.

Additionally, we may observe that Codex Bezae has the opening phrase of Luke 23:54 correctly "and it was the day before a Sabbath", and not "and it was dawning on the Sabbath." The latter phrase makes no sense since it was clearly getting dark at the start of the annual Sabbath. The Greek word ἐπιφωσκούσῃ means lighting up, and is always used for dawn. Many have undertaken to justify interpreting *dawning* to mean sunset on the basis of its use in Luke 23:54. Since the Greek word is used no where else in Greek literature in such a sense, except by circular reasoning leading back to Luke 23:54, it follows that it stands as a simple contradiction or discrepancy in Luke 23:54.

Conveniently, the best way I know to resolve this discrepancy is to adopt the reading of Codex Bezae, which omits the word entirely.

The Length of Yeshua's Ministry

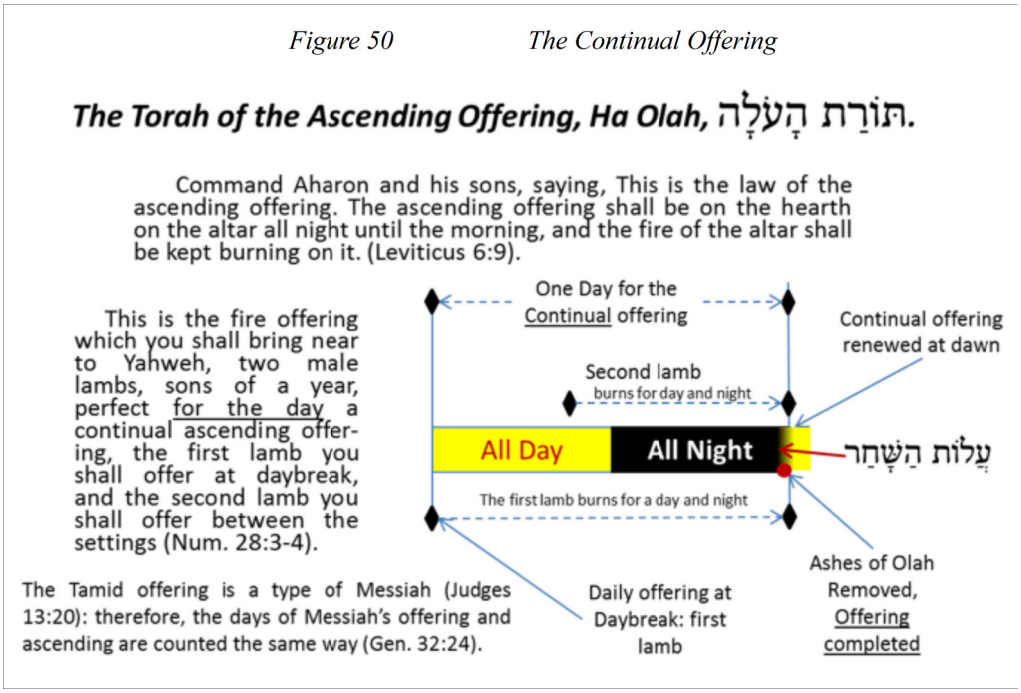
The ending of Daniel 9 with a 62nd Sabbatical year (which had followed the 7 sabbatical years beginning in 445 BC) in AD 32/33 points us to AD 34 as the first year after it, when Messiah was cut off. I already worked backward from Yeshua's immersion in the fall of AD 29 to his birth in 2 BC. Now let us work forward from that point, and show that his ministry comes to AD 34, where as already shown, the crucifixion day must land on Wednesday, March 24th. The same date is Aviv 14 in the Scriptural calendar. And three days brings us to dawn on the weekly Sabbath for the resurrection by the rules of the calendar. The length of Messiah's ministry additionally confirms the date.

Yeshua tells a parable giving the length of His ministry in Luke 13:7-8, "Behold, these three years I come seeking fruit on this fig tree, and find none: cut it down!" The dresser of the vine-

yard said, "Adoni, let it alone this year also, till I shall dig about it, and dung it." Adding 4 years to *Nisan* **A.D. 30** brings us to *Nisan* **A.D. 34**, or *anno* **4173**. So Yahweh left the tree alone for all of **4172**, but after the 4th year expired He cursed the fig tree. This parable gives the length of the whole ministry in one passage. He made his first public appearance in **AD 30**, at the passover, just after his immersion in the fall of **AD 29**. From his first public appearance to the crucifixion is exactly four calendar years.

However, yet more details fix the chronology. The Passover season is at hand in Luke 6:1, where there is reference to "on the second-first Sabbath." To understand this phrase, we must understand that there were two Sabbaths during Passover week: The Passover holy day, the **15**th of Aviv (Nisan) is called "The Sabbath" (Lev. 23:11, 15)[195] because it was the principle annual Sabbath of the year, the same day that the anniversary of the Exodus would be counted, as the **480** years of 1st Kings 6:1 are counted according to that day. The weekly Sabbath would follow this annual Sabbath. Israel developed ways to distinguish between the Passover Sabbath and the weekly Sabbath. Since the Passover Sabbath was the *first day of unleavened bread*, it was called the *First Sabbath*, and the weekly Sabbath that followed, was called the "Second-first" Sabbath.

Figure 50 *The Continual Offering*



Moreover, because God required Israel to count seven Sabbaths after the Passover during the 50 days leading to Pentecost,[196] the "Second" Sabbath was also known as the "First" Sabbath. Therefore, they called it the "Second-first Sabbath" to distinguish it from the Passover Sabbath.

So, Luke 6:1 is referring to an additional Passover in **A.D. 31**, *anno* **4170**.[197] This brings the number of Passovers in Messiah's ministry to two. The next passover in in John.

John 6:4 refers to the Passover of *anno* **4171**, **A.D. 32**. Yeshua absented himself on a journey during the Passover of **A.D. 33**, implied in Luke 13:1, when Pilate mixed some Galileans blood with their Passover sacrifices. Finally, the 4th year, **4172**, of the parable terminates with the Passover of **A.D. 34**, *anno* **4173**.

The year **4173**, **A.D. 34**, satisfies the lower bound of the Daniel 9:24-27 prophecy. It is immediately after the **62**nd Sabbatical year 7, A.D. **32/33**.

Year	Occasion	Texts
AD 30	Passover	John 2:13
AD 31	Passover	Luke 6:1
AD 32	Passover	John 6:4
AD 32	Tabernacles	John 7:1-10:21
AD 32	Hanukkah	John 10:22-38
AD 33	Purim-Temple Tax	Matt 17:27.
AD 33	Passover Massacre	Luke 13:1-2
AD 33	Preaching Journey	Luke 9:51-17:11
AD 34	Passover	John 11:55

The Third Day

According to all the types and direct statements in Scripture the death and resurrection of Messiah had to occur within three days. The three days are calculated from dawn to dawn, and the counting is always inclusive. The start *terminus* falls on the first day, and the end *terminus* falls on the third day.

(1) "I do cures today, and tomorrow, and the third day I shall be perfected (Luke 13:32). Yeshua is speaking literally and figuratively; he is speaking eschatologically, and also of his death and resurrection. The starting point is when he is speaking, and the ending point referred to is within three days.

(2) "And Jacob saw the face of Laban, and behold it was not with him as yesterday, or the third day" (Gen. 31:2, 5, 22). The Scripture counts backwards, the starting point and ending point all inside of three days.

(3) "Wherefore have ye not fulfilled your task in making brick as yesterday or the third day, even yesterday, even today?" (Exo. 5:14). Again counting backwards, the starting point is the day the taskmasters are speaking, and the third day referred to is within three days going backward.

(4) "Then on the third day Abraham lifted up his eyes, and saw the place" (Gen. 22:4). The starting point is when he set out, and the ending point is the third day. Three days are not counted with 0 at the starting day, i.e. 0, 1, 2, 3. They are counted with 1 at the starting point: 1, 2, 3.

(5) Joseph's interpretation of the dreams of Pharaoh's officials puts their fulfillment "within three days." The Hebrew idiom means *within* three days: בְּעוֹד שְׁלֹשֶׁת יָמִים. Gen. 40:13.

(6) "After two days he will revive us: in the third day he will raise us up, and we shall live in his sight" (Hos. 6:2). Counting with the word 'after' does imply that the start terminus is counted at 0. The counting is 0, 1, 2. After two days is equal to the third day,

195 Also in Mesopotamia, they called the 15th day of the month *šabbattu* as a semi-monthly "day of rest". See Jastrow, Morris, "The Day After the Sabbath", *The American Journal of Semitic Languages and Literatures*, Vol. 30, No. 2. (Jan., 1914), pp. 94-110. Abraham left Ur of the Chaldees on this day. The Exodus was on this same day.

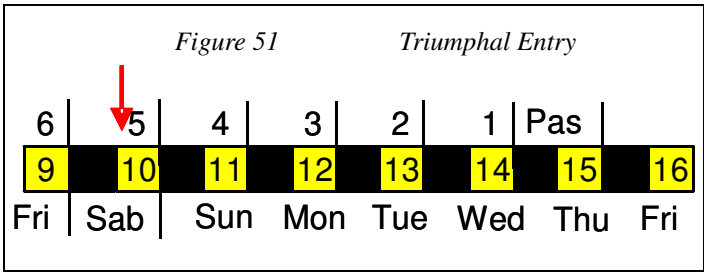
196 Lev. 23:15-16, "From the time after the [Passover] Sabbath you shall count seven complete Sabbaths. Yet, following the seventh Sabbath you shall count a fiftieth day."

197 It is noted that Yeshua's disciples were eating the new grain on this Sabbath, an act that was only permitted after the waving of the sheaf in the Temple on the day after Passover.

which is computed 1, 2, 3. This passage is full of messianic and eschatological cipher, "His going forth is at dawn" (Hos. 6:3).

The three days are calculated according to the continual offering, which is a type of Messiah. Refer to Figure 50. The first lamb is put on the alter at daybreak (Num. 28:3-4), and remains there all day, and all night. It's ashes are removed in the morning (Lev. 6:9-10). The second lamb is put on the altar between noon-

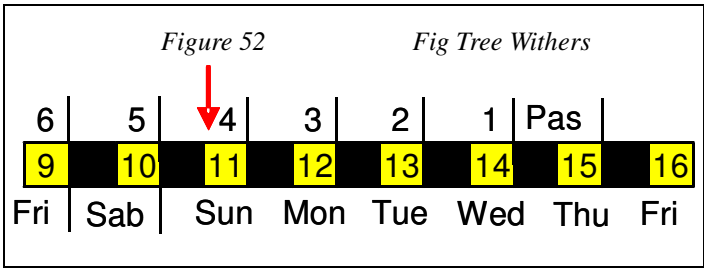
Figure 51 *Triumphal Entry*



set and sunset (between the settings), and it burns the remainder of the day, and all night until daybreak, when the ashes are removed by the priest. Two lambs *for the day,* numbered in order, *one* and *two*, so that the day is from dawn to dawn.

Yeshua's offering in AD 34 synchronizes exactly with three continual offerings, and three special offerings on the same schedule. On the first day, there are two lambs, the daybreak lamb when Yeshua began to suffer, and the second lamb as he hung on the cross. And when he died, the special Passover offering was slain. The three offerings on the first day were eaten or burned by dawn on Thursday.

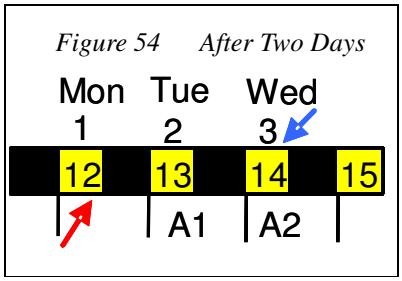
Figure 52 *Fig Tree Withers*



At dawn on Aviv 15 (March 25), the day was renewed with the first lamb. Then just after noon, the second lamb. The third offering was offered toward sunset, and this was the second Passover offering, the memorial of the Exodus. The two offerings remained on the altar all night burning until dawn. The third offering was eaten, and then the remains burned all night until dawn.

At dawn on Aviv 16 (March 26), the day was renewed with the first lamb. Just after that lamb the special offerings of the wave sheaf, part of which was put on the altar, and part of which was eaten. An extra lamb was offered with the wave offering as a burnt offering (Lev. 23:12). After noon, the second lamb of the continual offering was offered. These three offerings remained on the altar all night according to the Law, and their final ascendings occur just before dawn, when the priest removed the ashes.

Figure 54 *After Two Days*



Just before the daybreak of Aviv 17 (March 27), Yeshua ascended from the grave completing the type of the wave offering, the continual offering, the Passover in Egypt offering, and the second Passover offering memorializing the Exodus. All agrees with the laws of the calendar, the prophesy, and accurate astronomical calculations witnessed the Almighty's designated timekeepers, the sun and the moon.

Scripture chronology exists to give a rock solid foundation to Messiah's death and resurrection. It cannot be moved; it cannot be shattered or broken. It is a firm basis for truth, and a sufficient reason to trust in and be faithful to Messiah.

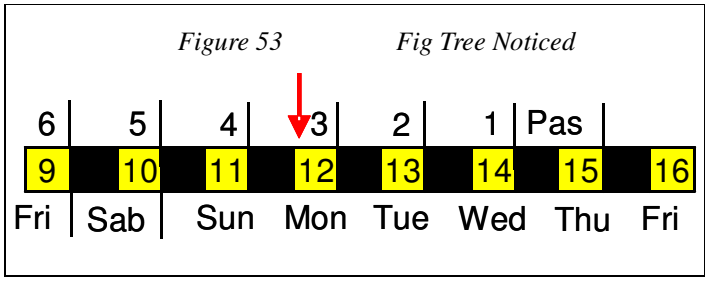
The Final Week, Day by Day

> "The Saviour had reached Bethany only six days before the Passover, and according to His custom he sought rest at the home of Lazarus. The crowds of travelers who passed on to the city spread the tidings that He was on His way to Jerusalem, and that He would rest over the Sabbath at Bethany. Among the people there was great enthusiasm. Many flocked to Bethany, some out of sympathy with Yeshua, and others from curiosity to see one who had been raised from the dead"[198]

"Six days before the Passover Yeshua came to Bethany" (John 12:1; see Figure-47: Six Days). This was Friday, Nisan 9, and the count of six days is with reference to the Passover Seder in the night after the 14th day,or the second Passover offering on the 15th of Aviv, the memorial of the Exodus. When they were done serving supper, on the eve of the Sabbath Yeshua was anointed as the lamb of God (John 12:2-8; Exodus 12:3-5). It was Nisan 10, the day the lamb was set aside in Egypt.

"On the next day" was the triumphal entry (John 12:2-36; Matt. 21:1-11; Mark 11:1-11; Luke 19:29-44; See Figure 51). This was the Sabbath, Nisan 10.[199] Yeshua looked around in the Temple and "as the hour was already late, He went out to Bethany with the twelve" (Mark 11:11) at the end of the Sabbath.

Figure 53 *Fig Tree Noticed*



The next day was Sunday. On the way to Jerusalem from Bethany, he cursed the fig tree, and it withered after they had passed by it, but his disciples did not notice (Mark 11:12-14; Figure 52). Upon arriving at the Temple, he cast the money changers out of the Temple (Matt. 21:12-17; Mark 11:15-18; Luke 19:45-46). This was done on Sunday. "When it became late he went out of the city" (Mark 11:19). They passed by the fig tree in the dark.

In the morning, on Monday, they passed by the fig tree and Peter said "Rabbi, behold, the fig tree which thou cursed is withered away" (Mark 11:21; Figure 53). After this Yeshua taught in the temple and answered the wily questions put to him. Then he went out onto the Mount of Olives and prophesied the future of Jerusalem and the Temple.

198 Yeshua arrived in Bethany six days before Passover, and when the Sabbath began he rested. Since, this was the case, there is simply no way to reach a Friday Crucifixion by counting down these six days. The supper would have been just before sunset beginning the Sabbath.

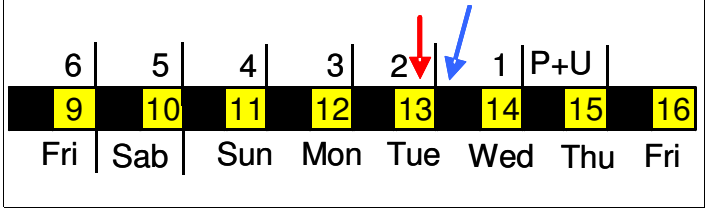
199 The Friday and Thursday Crucifixion theories place John 12:1 on the Sabbath, and have Yeshua traveling a long distance on that day.

After the end of the teaching on the Olives discourse ↑, Yeshua says, "You know that after two days is the Passover, and the Son of man is betrayed to be crucified" (Matthew 26:2; Mark 14:1; Figure 54). He says this on Monday afternoon, the 12th of Nisan. Therefore, after one day will be Tuesday (A1), and after two days will be Wednesday (A2). The lambs are killed at ↓ and the Seder is night following the 14th day, and "unleavened bread" means the first day of unleavened bread, the 15th Sabbath, which begins at sunset toward the end of the day part of the 14th of Nisan.

Monday evening, Yeshua ate super at Simon's house where he was anointed the second time (Mark 14:3-11). On the next day, which is Tuesday, Nisan 13 the disciples asked him about Passover preparations ↓ (see Figure 55). Matthew 26:71, Mark 14:12, and Luke 22:7 tell us that they asked the question about Passover preparation "on the head day of unleavened bread." The reader should refer back to the previous discussion of Exodus 12:15:

Exodus 12:15 states that they should remove the leaven "on the head-most day"[200] (**בַּיּוֹם הָרִאשׁוֹן**), which for Passover is the **14th** day of the month. (The phrase is ambiguous and also is translated, "on the first day" when it refers to Nisan 15.) In this text it

Figure 55 *Preparation Begins*



means the day heading up the feast of unleavened bread, which is the **14th.** This is because the actual Sabbath of leaven was begun at sunset on the **14th** day. (The Israelites understood that the **15th** day did not begin "until the morning" with the sunrise). That *head day* is meant is made clear by "on the **14th** day at sunset you shall eat unleavened bread" (Exodus 12:18).[201] The night of the **14th** was the same day the Passover was offered according to the Temple precept, by which the offering had to be consumed before the next day began in "the morning" (Lev. 7:15; Exodus 12:10). Therefore, the **14th** was the *head day*, and the annual Sabbath began at sunset on the **14th.**

So the last Supper was eaten Tuesday evening, at the start of Aviv 14, ↓. The passages may be harmonized as follows:

> And they came on the head day of unleavened bread, when it was necessary that they would have sacrificed the Passover. The disciples approached Yeshua, saying, "Where will you that we should go and arrange for you, that you may eat the Passover?" So So he sent two of his disciples, Peter and John, saying, "Go and arrange us for the Passover, that we may eat." And they said to him, "Where will you have us arrange?" And He said, "Go into the city to such a man, and he will meet you carrying a pitcher of water; follow him and wherever He may go in, and say unto the man of the house, "The Master saith to you, 'My time is near; where is the guest room, where the Passover with my disciples I may eat? With you I make the Passover with My disciples.'" And he will show you a large upper room, furnished and ready; then arrange us for that place. And the disciples set out and went into the city and did as Yeshua had appointed them; and they found just as he had said to them and they set up for the Passover.

Many have mistakenly supposed that the last Super was the official Seder eaten on the 15th of the month. This comes about from failing to observe that there are two usages of "first day": one really means the "head day of unleavened bread" and refers to the day on which the leaven was removed and the lamb sacrificed. The other refers to the first of the seven days feast of unleavened bread, and excludes the head day from the count.

Also notice in the harmony text that I have translated accurately Yeshua's words "may eat." This does not mean he said "will eat," and leaves open the possibility that it may not be eaten if their accomplishment of their plans are interrupted, as Yeshua knew they would be. Furthermore, the narrative does not say that they cooked the Passover *lamb*. It does not say they took it to the temple to have it slain that evening. They may indeed have had the Passover lamb with them. In fact it was likely that they bought one, but since the Passover sacrifice was to be the next day, they would not bring it to the temple, but would have kept it with them.

I have underlined certain words in the harmony, as some are bound to object to placing the last supper on Tuesday evening. We should ask they if they are certain that head day must mean Nisan 15? Are they certain that *may* eat means *must* eat. Are they certain that *arrange* for the Passover means to immediately sacrifice and cook the Passover lamb? One thing is for certain. If they are certain about the date being Nisan 15, then they are certainly contradicting the book of John, where it is put on Nisan 14. And they are certainly contradicting every other plain statement already discussed, beginning with Exodus 12:15. As a result of their position they would require the leaven to be removed on the first day of the seven days feast, rather than the head day of the feast. For they would have to deny that the words can mean the head day, or they would have to be arbitrary in denying it in Matthew 26:17, Mark 14:12, and Luke 22:7. I don't think they understand the contradiction their position implies. No leaven is to be found in the house on the first day of unleavened bread. Therefore, it must be removed on the head day.

Therefore the Last Super was after sunset on the 13th of Nisan, (or using a sunset calendar day on the night starting the 14th day) ↓. Moreover, when Judas left, "some *of them* thought, because Judas had the money bag, that Yeshua had said unto him, 'Buy *those things* that we have need of against the feast'" (John 13:29). No one would have supposed that Yeshua would instruct a purchase on the festival Sabbath in the night after the 14th. For all work was forbidden and Jews did not sell things to other Jews after sunset on the 14th. The supper was therefore on the 13th after sunset ↓. Likewise, Joseph finds it possible to buy linen on the 14th before sunset to bury Yeshua (Mark 15:46). John informs us that the 14th was the "preparation of the Passover" (John 19:14),

200 The "head-most day" is one day prior to the feast. It is the day of preparation before the seven days. Sometimes this is translated "preceding day" or "day before," but I think it helps to understand how the literal Hebrew gives these results. The word *Rosh* means "head" in Hebrew, and the suffix *on* is an intensifier that makes the word superlative, i.e. head-most or header day, which heads up the seven days of the feast.

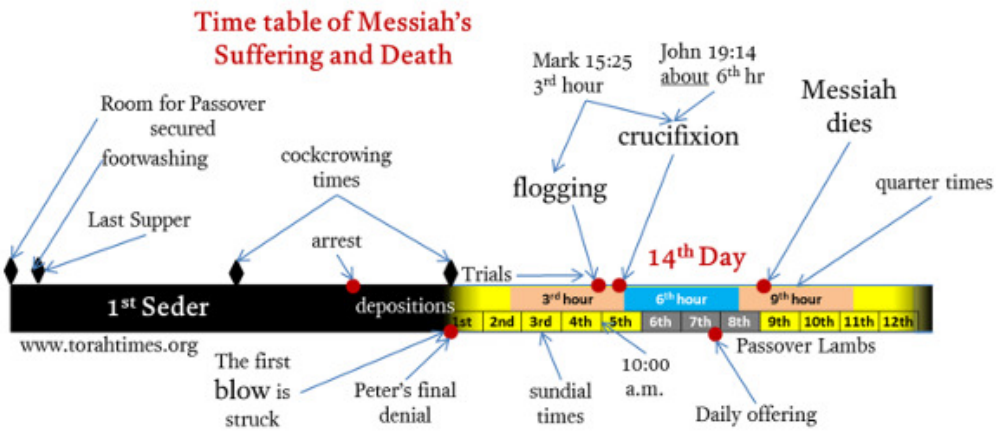
201 This usage is just like the legislation for Yom Kippurim. The Day of Atonements is defined as lasting from the setting of the 9th day to the setting of the 10th day. The 9th day began with sunrise, and the next day, the 10th, began with sunrise in the reckoning of the Temple service (cf. Lev. 7:15). Yet elsewhere, Yom Kippur is defined as just the 10th day (using a sunset reckoning for the day), beginning with sunset ending the 9th day and including the night following the 9th day as part of the 10th day as with all Sabbaths.

and likewise tells us that the Jews would not enter the "hall of judgment" lest they be unable to eat the Passover (John 18:28). Therefore, the Last Supper ↓ is exactly one day before the Passover.

Before Supper Yeshua washed the feet of the disciples. He tells them, "I will by no means eat thereof until it be fulfilled in the kingdom of God" (Luke 22:16) referring to the Passover. He said this because He was the Passover and would have to depart and be unable to eat it. (Yet we may suppose that he did eat the Passover in the second month after His resurrection since he had already fulfilled it and therefore could eat it without breaking his word).

And after super he designated the third cup as a sign saying, "This is my blood of the covenant" (Matthew 26:28; Mark 14:24). And he also designated the unleavened bread as a sign of his body. After midnight they went out to the Mount of Olives. He was arrested that night. They put him on trial in the morning after taking depositions, and "about the sixth hour" they crucified him (John 19:14). Mark refers to Messiah's flogging at the third hour. These times may seem discrepant, but that is only if we consider the time in terms of modern timekeeping. Refer to Figure-56.

Figure-56



The third, the sixth, and the ninth hours are called quarter times. The fourth quarter is really the beginning and the end of the day before the third hour and after the ninth hour. It was customary to use quarter times almost ±1½ hours in terms of modern time. Thus the 3rd hour is strictly 9 a.m., yet anything between 7:30 and 10:30 could be called the third hour, and anything between 10:30 and 1:30 could be called the 6th hour. Therefore, if the flogging at the third hour is what Mark refers to then this could be about 10 a.m., whereas, the crucifixion referred to at the sixth hour by John can be between 10:30 and 11, and it would fit the usage of the day. John would refer to the actual procedure of hanging him on the cross, and Mark would refer to the preliminaries.

Darkness covered the land from noon to 3 p.m. (Mat. 26:45; Mark 15:33; Luke 23:44). We should recall the "Covenant of the Pieces" (Genesis 15:12). Also this was the time for the slaughtering of the Passover lambs, however, it is likely that the process had to slow down until the light returned after 3 p.m. Also we can compare this with the three days of darkness in the land of Egypt, one hour of darkness corresponding to one day of darkness.

About 3 p.m. Yeshua died and there was an earthquake: the lintel stone over the outer porch of the temple cracked and tore the outer veil covering the temple doors. Luke 23:44-46 records the signs first and then Yeshua's death. Matthew 27:50-54 records Yeshua's death first and then the signs, which were seen by the Centurion (Luke 23:47). We can only conclude that the events were simultaneous.

A Forty Year Tradition

According to the Talmud, 40 years before the destruction of the second Temple strange signs began to occur in the Temple:

> Forty years before the destruction of the Temple, the western light went out, the crimson thread remained crimson, and the lot for the Lord always came up in the left hand. They would close the gates of the Temple by night and get up in the morning and find them wide open" (Jacob Neusner, The Yerushalmi, p.156-157).

Also in the Babylonian Talmud:

> Our rabbis taught: During the last forty years before the destruction of the Temple the lot ['For the Lord'] did not come up in the right hand; nor did the crimson-colored strap become white; nor did the western most light shine; and the doors of the Hekel [Temple] would open by themselves" (Soncino version, Yoma 39b).

Now 30 years before the destruction of the Temple was at the Passover of AD 30. For the temple was destroyed in AD 70. One year before this was in AD 69. Adding 39 and subtracting 39 yields AD 30 as 40 years before. Christians have long assumed that the meaning of these signs is that God rejected the Temple service at the crucifixion of Messiah. But that is an assumption. All the tradition records is the signs. The tradition does not interpret the signs.

Since we know that Messiah did not die in AD 30, I would suggest a better interpretation of these signs that does not go against Scripture. Yeshua began his ministry in AD 30 at the Passover. At this first Passover of his ministry, he cleared out the money changers in the Temple (John 2:14). It says "Zeal for Thy house will consume Me" (John 2:17). The Jews then asked Yeshua, "What sign do You show to us, seeing that You do these things?" Yeshua answered, "Destroy this Temple, and in three days I will raise it up" (John 2:19). But they did not listen to him concerning this sign.

So I propose that the Father allowed them a sign. He allowed them the sign recorded in their tradition. And the proper interpretation of it is that He disapproved of their response to Yeshua. The signs in the Temple were to show his disapproval of the leadership of Judah, and that the Temple would not save them because they had rejected the Messiah. The signs themselves were no commentary on the validity of the Temple for those who accept Messiah and repent. For none of the signs touched any necessary part of the Temple either in AD 30 or in AD 34 when he

died, but the Temple was destroyed later in AD 70 on account of the sins of Judah as it was destroyed in 587 BC. And as it was rebuilt after 587 BC with divine approval, so also a time will come again when the Temple will be rebuilt with God's blessing, and it will serve again as God's approved means of corporate worship for all Israel (Jer. 33:17-22).

Burial Procedures

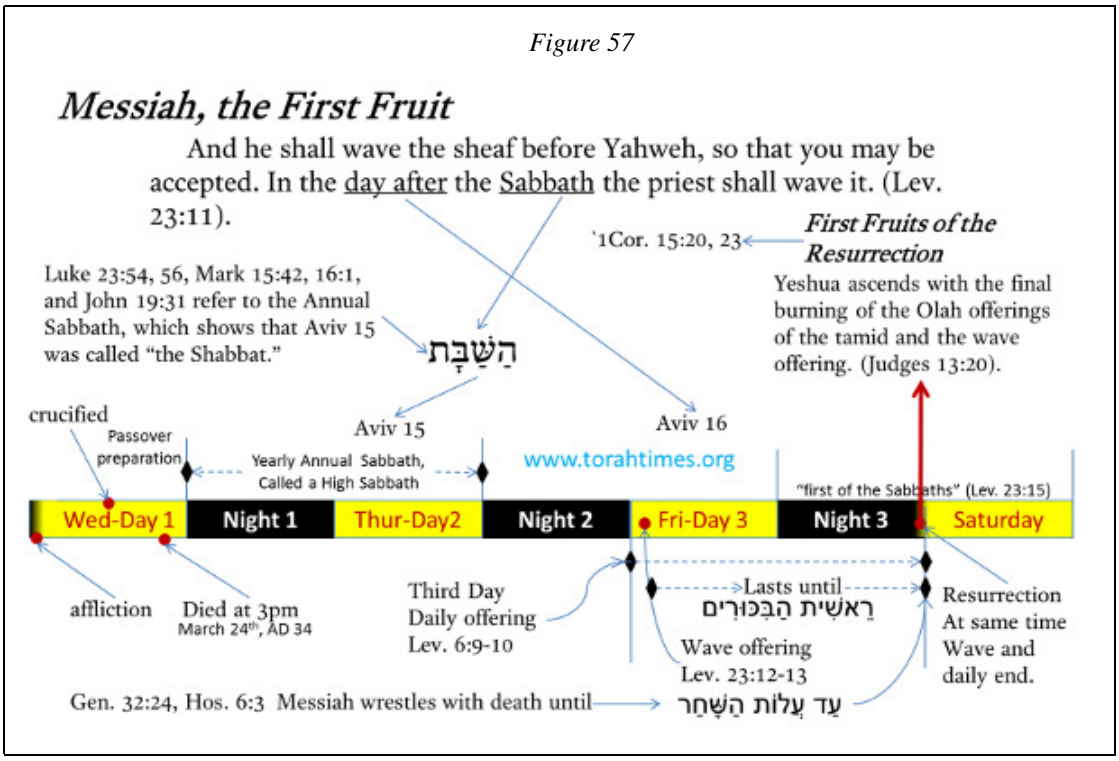
Joseph acquired the body of Yeshua after he died. He bought a piece of linen,[202] and they quickly laid him in a tomb. This was a single sheet, in which Yeshua was quickly wrapped and laid in the tomb before the sun set on Wednesday. It was the "preparation of the Passover" (John 19:14) just before the great Sabbath that year (John 19:31). But, Mathew refers to this annual Sabbath as "the next day" (Matthew 27:62) so as not to confuse it with the weekly Sabbath, and then says the resurrection day is the "Later of the Sabbaths" (Mat. 28:1). Matthew gives us the events that happened on the Great Sabbath, or the "next day" as he calls it. He says:

> Now the next day, that followed the day of the preparation, the chief priests and Pharisees came together unto Pilate, 63 Saying, Sir, we remember that that deceiver said, while he was yet alive, After three days I will rise again. 64 Command therefore that the tomb be made sure until the third day, lest his disciples come by night, and steal him away, and say unto the people, He is risen from the dead: so the last error shall be worse than the first. 65 Pilate said unto them, Ye have a watch: go your way, make *it* as sure as ye can. 66 So they went, and made the sepulchre sure, sealing[203] the stone, and setting a watch (Matthew 27:62-66).

The reference to after three days is found in several other passages (Mark 8:31, 9:31 *Geek text*, 10:34, *Greek Text*). After three days is reckoned with reference to literal days, which end at sunset. After three days, therefore, would refer to anytime between sunset on Friday, and sunset on Sabbath. (However, the Catholic chronology does not hold up. It places the resurrection only after two days.) The Pharisees meant for the tomb to be secured until the end of the Sabbath, as this would cover the longest possible interpretation of *after three days*.

Mark also refers to the annual Sabbath, "And when the Sabbath was past, Mary Magdalene, and Mary the mother of James, and Salome, bought sweet spices" (Mark 16:1). This purchase was made on Friday after the annual Sabbath. Also on this day Joseph embalmed the body of Yeshua using multiple strips of linen[204] (John 19:39-42). In John 19:42 "preparation" refers to the regular weekly preparation on Friday.

Figure 57



The First Fruits or Wave Offering

Now the Passover was killed on the 14th of Nisan, and the sheaf was waved on the 16th of Nisan. This was "in the day after the Passover/Sabbath" (Lev. 23:11; Joshua 5:11). The Festival Sabbath was on the 15th, and the day after it was the 16th. Likewise, the extra festival offering called "Passover" (Deut. 16:1-8) was offered at the going down of the sun on the 15th day. The third day is the day of the wave sheaf "for your acceptance." So Yeshua rose on the third day, which is the 16th of Nisan according to the Temple reckoning. Refer to Figure 57.

The Time of Day of the Resurrection

Scripture gives us the time of day at which the resurrection would occur. Matthew reports that it was dawning. Mark says that it was very early. Luke uses words that mean deep dawn, and John says while it was still dark. All of these usages are meant to imply that the resurrection was at the end of night. Matthew first says it was dawning on the later Sabbath of Passover week. Then he tells us that there was a great earthquake. Similarly, there had been an earthquake when Yeshua died, and the resurrection of many had occurred at the same time (Mat. 27:52-53). They were raised when he died, but they came out after his resurrection.[205] In tombs at that time it was possible to stand or sit without actually going out. So these persons were sustained after their resurrection for three days until Messiah was raised, and then they came out.

202 This was a single piece of linen; see Mark 15:46. **σινδόνα**.

203 Or "securing"; It must not be thought that it was impossible for Joseph to gain permission to enter the tomb to complete the embalming. The tomb was easily enough resealed after attending the body. The purpose of the guard was to ensure the body wasn't stolen. They would have let Joseph, a man with connections, enter to embalm the body, but they would not have moved the stone for the women (Mark 16:3).

204 This is because Joseph took off the one piece he covered Yeshua with on Wednesday, and replaced it with strips wrapped with the embalming spices.

205 Both the crucifixion day and the resurrection day are the prophetical third day. Isaac was raised from the altar, but the lamb that replaced him died.

Matthew's first earthquake is simultaneous with resurrection, so we may expect his second earthquake at the dawning to signal the resurrection of Yeshua. The dawn time frame agrees exactly with the implied time everywhere, and the mention of the earthquake after the dawning verse means that the resurrection cannot be placed at any other time of day.

The prophetic types also point to a dawn resurrection, and one passage specifically says that is when it would be (Hosea 5:14-6:3):

> 5:14 For I *will be* unto Ephraim as a lion, and as a young lion to the house of Judah: I, *even* I tear[206] and I depart[207]; I will bear[208], and none shall rescue *Me*[209]. 15 I will go *and* return to my place, till they acknowledge their offense, and seek my face: in their affliction they will seek me at dawn.
>
> 6:1 Come, and let us return unto YHWH: for he hath torn, and he will heal us; he hath smitten, and he will bind us up. 2 After two days will he revive us: in the **third day** he will raise us up, and we shall live in his sight. 3 Then shall we know, *if* we follow on to know YHWH: his going forth is fixed at dawn; and he shall come unto us as the rain, as the rain and the spring rain pounding the earth.

"I *even* I tear" is to be compared to, "Yet it pleased YHWH to bruise him" (Isaiah 53:10). "I depart" refers to John 14:28 and 16:7. It is a reference to Yeshua's death. The words "I will bear" can be variously translated as "forgive" or "endure". "None shall rescue" (vs. 14). No one rescued Yeshua off of the cross. The speaker is YHWH, so Yeshua is identified as YHWH as in Zechariah 12:10. "They will seek me at dawn" is the literal translation of vs. 15. The women who went to the tomb sought Yeshua at dawn at the end of the third day. When Israel repents at the end of days, they will learn to seek their risen Messiah at dawn on the third day. This is what the words "till they acknowledge their offence, and seek my face" mean. This will happen during the time of Jacob's "trouble", and is the referent of the words "in their affliction".

The passage also teaches that Yeshua will go away from Israel until Israel repents, and that at the end of days Israel will "return unto YHWH" (6:1) after having "torn" Israel. That is just what He did when Israel and Judah were exiled.

"After two days he will revive us" stands parallel to "in the third day he will raise us up" (vs. 2). This is because 'after' is counted on the next day from the crucifixion, and "in the third day" is counted inclusively from the crucifixion. Now the resurrection of Messiah is hidden in the plural "revive us" because not only was Yeshua raised on the third day, but also many saints who had died, since the prophetical third day is also the day of the crucifixion.

The prophecy continues, "His going forth is fixed at dawn" (6:3). The King James Version tries to translate this as "as the morning," but that is not what the Hebrew word "שַׁחַר" means. This word means "*the reddish light preceding dawn*" (Koehler). It comes from a root meaning "be black" or "become black". As dawn is to dark, or dusk to dark, so also *shachar* is to *shachor*. Observe that the English words dawn and dusk are related to dark (da***, d**k). The Hebrew word has the same relation to the Hebrew word dark. The Hebrew word for black is "שְׁחוֹר".

… They will seek me at dawn יְשַׁחֲרֻנְנִי … in the third day … his going forth is fixed about dawn כְּשַׁחַר.

Young's Literal Translation:

> 1. Genesis 32:24 And Jacob is left alone, and one wrestleth with him till the ascending of the dawn;
>
> 2. Joshua 6:15 And it cometh to pass, on the seventh day, that they rise early, at the ascending of the dawn, and compass the city, according to this manner, seven times; (only, on that day they have compassed the city seven times);
>
> 3. Nehemiah 4:21 And we are working in the business, and half of them are keeping hold of the spears, from the going up of the dawn till the coming forth of the stars.
>
> 4. Job 3:9 Let the stars of its twilight be dark, Let it wait for light, and there is none, And let it not look on the eyelids of the dawn.
>
> 5. Isaiah 14:12 How hast thou fallen from the heavens, O Lucifer, son of the dawn! Thou hast been cut down to earth, O weakener of nations.

206 The word "will" should be deleted. Trying to translate a tense into Hebrew here interferes with the double meaning.
207 "depart" is better than "go away" as it is associated with the "departing" of death in English and Hebrew.
208 Or "bear" or "carry off" or "endure" or "forgive".
209 Or *him*, i.e. Messiah.

THE CHRONOLOGY OF PAUL

The important point in the chronology is the year Paul was arrested. To find this I start at the point when Felix was succeeded by Festus in AD 59, which the coin evidence is reported to show. From this point subtract 2 years that Paul was a prisoner while Felix was in office (Acts 24:27). This places Paul's arrest in AD 57. To confirm this, after Paul was in Corinth for 18 months, he was taken before the judgment seat of Gallio, whose tenure in office can be dated AD 51-52. Choosing the spring of AD 52 as the time for this leaves just enough time for the rest of the events. Paul went to Jerusalem before shipping closed down in the fall of AD 52, and then he returned to Asia by land preaching all around until he arrived at Ephesus in the summer of AD 53. By the fall of AD 53 he moved into the hall of Tyrannus for two years (until fall AD 55). He then spent a third year in Ephesus (to fall of AD 56), in which time Demetrius incited the Ephesians against Paul. Paul left Ephesus, and spent time in Macedonia and three months in Greece, and from there we arrive at Paul's arrest in Jerusalem again in AD 57.

The rest of Paul's chronology falls neatly into place. He attended the stoning of Stephen in late AD 34, then a 1½ year persecution follows, ending with the conversion of Paul on the Damascus road. Paul preached in Damascus, and then went into Arabia for three years. Counting onward to 14 years after his conversion we come to the Jerusalem Council in AD 49. About a year and a half later he arrives in Corinth for 18 months.

Let us now return to Paul's arrest in AD 57. In A.D. **57**, Paul sails "with the days of unleavened bread"[210] and arrives in Troas on the 5th day of the feast. It is not said what they did on the sixth and 7th days of the feast, other than the fact that they spent them. Then Paul preached on "first of the Sabbaths" after Passover (Acts 20:5-7)[211]. The Passover Sabbath was on Saturday, April **9**th in that year. This allows five ordinary days to come between the **1**st day of unleavened bread and the **7**th day of unleavened bread, without being interrupted by the weekly Sabbath or a feast day. During this period they sailed, i.e. between April 10 and 14. Ordinarily the passage from Philippi to Troas takes 1½-2 days. It is likely that they left on April 11 or 12 so as to arrive on the 5th day of the feast (April 13) as stated. A longer time may be supposed only if they left in good weather and got caught in contrary weather en route. In any case they arrived on day five.

Finally, if we do the astronomical calculations for AD 57, we find that everything agrees with the chronology of the text. In AD 56 the seven days of the feast are not used up before the first of the Sabbaths arrives, as implied by Acts 20:6b, "...where we used up (or consumed) seven days." The meaning is that the seven days of the feast were used up before the arrival of the first of the Sabbaths (Acts 20:7). In AD 55 they would not have been able to reach Troas on the 5th day of the feast without passing up the first of the Sabbaths. The same many be said for AD 58. Any other years for Paul's arrest are simply impossible under the constraints imposed by Gallio's administration and Felix's departure date.

It should be noted that the interpretation that they sailed after the seventh day of the feast is against the Greek usage of the verb with the preposition, which means "into the midst of." Secondly, it should be noted that a consequence of that mistake forces the reader to imagine that "five days" refers to the length of the trip. On the contrary a typical trip is 2 days. In Acts 16:11, it says, "Therefore, putting out to sea from Troas, we ran a straight course to Samothrace, and on the day following to Neapolis." Neapolis is the port next to Philippi, which is inland a bit.

The prevailing wind in the North Aegean blows from the North or North west at 10.2 knots during April-May, which means that normally, they should be able to sail the course from Neapolis to Troas in two days. As a further consequence, the seven days in 20:6b become an additional week. The time is lengthened by these consequences by two complete weeks, which would be deadly to Paul's plans to reach Jerusalem by Shavuot. If he had faced contrary winds making the crossing, he surely would have not stayed a week in Troas.

Luke's Travelog

Wait till after Passover	+8	delay 1
Wait two days +2	+10	delay 2
Sail for Troas +5	+15	weather
Stay for 7 days, +7	+22	delay 3
Leave Troas, +1	+23	
At Assos, +1	+24	
At Mityline, +1	+25	
At Chios, +1	+26	
At Miletus, +1	+27	
Send for Elders, +1	+28	
Speak with Elders, +1	+29	
Cos, +1	+30	
Rhodes, +1	+31	
Patara,+1	+32	
Cyrus sighted, +1	+33	
at sea, +1	+34	
at sea, +1	+35	
Unload at Tyre, +7	+42	delay 4
To Ptolemais, +2	+44	
Arrive Caesarea, +1	+45	
Stay 'some days", +4	+49	delay 5
64 mile trip, +4	+52	
Meet with James, +1	+53	
Paul makes a vow, +1	+54	

All of Luke's time notes in 20:6-7 are relative to the first day of unleavened bread. Firstly, they sail in the midst of the feast, probably on day 2 or 3. Then they arrive on day 5. Then it is not-

210 With verbs of motion and the accusative μετὰ Means, "into the middle of, coming into, among, esp. where a number of persons is implied" (Liddell and Scott),

211 The text interpretation must be corrected in several places. The Greek *meta* indicates that they sailed through the "midst" of the intermediate days of the feast. The text in vs. 6 should be translated "where we used seven days," which means they arrived at Troas, and there they used up all seven days of the feast of unleavened bread, which started before they left Philippi. The text should not be interpreted to mean that they spent an extra seven days at Troas after the end of the seven days of unleavened bread. For Paul was in a great hurry, and this contrary interpretation would seriously risk putting him in Jerusalem too late. The phrase "until five days" should similarly be taken with reference to the feast. They did not take five days to make the crossing, which would be too long a time, But they did arrive on the 5th day of the feast at Troas. It is not known which day of unleavened bread they left on, but it was probably the 3rd day of the feast.

ed that the 7 days expire in Troas, which then is followed by the first Sabbath after Passover (i.e. Nisan 15). This then shortens the trip by two weeks and makes it possible for Paul to reach Jerusalem by Shavuot. See Luke's Travelog to see how long the contrary view must be, counting from the 16th of the first month.

So we see that Paul does not make it by Shavuot on the 50th day, and even if a few days can be trimmed, he is always in danger of not making it, and therefore the delays vs. the intention to get to Jerusalem by Shavuot are unexplained. Finally, the first of the Sabbath does mean the first Sabbath after Passover (cf. Lev. 23:15), and therefore the chronology is certain.

The Punishments of Israel

Eschatological speculation is a dangerous thing, especially when you pin your hopes on it. It is always better to have someone in the present to pin one's hope on, and that is a real living relationship with Messiah Yeshua. Now I have always labeled my guesses as to what the future holds *educated guesses*. But even educated guesses can become stumbling blocks tempting one to misplaced trust, and misplaced expectations. If I have learned anything, when it comes to chronology, God is the God of the unexpected. When it comes to providing, God is the God of the unexpected. When it came the 70 year rule of Babylon, He lopped off 3½ years for the future.

What did the prophet Daniel expect to happen? It may be that he expected the kingdom to be restored, until he learned the deeper plan. What did the returnees under Zerubbabel expect concerning rebuilding of the temple? Did they have eschatological reasons to expect all the oppositions and delays they had to suffer until the 6th year of Darius? I doubt it.

The Almighty Adonai has his reasons for obscuring the future, and letting us have a half glimpse of it to let us know he is still in control so that we may trust him. Part of that reason is that man still has free will, and can choose to sin or do right in any situation. Even God's people have this choice! And God will plan the future for curses on those who sin against him, and for blessings for those who do right, regardless of any of our expectations. God always has an exit, a contingency ready and waiting for those who do evil, and one for those who do right. Trust God to engineer any situation accordingly.

The significant date is A.D. **57** when Paul gave his speech in the Temple. Even though the mission to the Gentiles began years earlier, his speech marks the official announcement that the gospel will go to the Gentiles.

Now in the former edition I wrote: "An exact dating of the exile of Judah may be obtained, but exactly where the end of the 390 years is supposed to be is not perfectly clear. It may even date to the 10th year of Esarhaddon! But the following explains it one way....." Well history passed, and I was proved wrong, so I am not including that speculation any more. And I am deleting other speculations (or making them less obvious) because I believe it is better not to speculate. The temptation to put one's hope in them is just too great. God's ability to bring an unexpected outcome exceeds all speculation. So I will include only one speculation as to an exact time. However, like the Babylonian hegemony, God may find a way to modify it should he need to.

Now the where the end of the 390 years goes is now clear. It ends the first year of Hezekiah. However, I know of no remaining calculation starting from that date upon when to base any guess concerning Israel's restoration. However, it appears that the end of the 65 year period in Isaiah 7:8, which concerns Ephraim's final dispersal, and the importation of nations into Ephraim so that Ephraim becomes not a people, is a possible starting point for calculating an extended seven-fold punishment, on the basis of Leviticus 26:18, 21; 24, 28. What might be expected at the end of this period is for Ephraim to be settled back in the land of Israel, and be there established as a nation once again. Of course Ephraim has never ceased to be a nation in Yahweh's sight, but I am talking about a renewed tangible manifestation of the spiritual reality. So with all the caveats, Ephraim's sin was 390 years. Seven times that is 2730 years. If we begin in 671 BC, the the tentative date for restoration is 2059. I can't tell you which end of the year, nor can I tell you the first year is not counted as a part year.

Another guess, or parameter, as you may call it, which I will speak of is that Israel is restored "on the third day" according to Hosea. 6:1-2. The third day is accordingly interpreted as a thousand years, just as the day of Yahweh is interpreted as a thousand years, and the day in which Adam died is interpreted as a thousand years. As this third day was related to Messiah's death and resurrection in AD 34, I suppose that the prophetical third day is between 2034 to 3034.

In conjunction with the budding of the fig tree, Yeshua said that "this generation will not pass until all these things happen." I have to say that many speculated this referred to the Jews. However, there a bit of a problem, and that is the generation that saw their budding is all but dead. It really depends on what date you pick to define "this generation." The failure of a guess can, of course, point one in a better direction. And I have one. Yeshua cursed the fig tree that was Judah. There is no prejudice here, because we all know that Ephraim was cursed too. However, Messiah began to lift Ephraim's head when the good news was preached to the nations. So I propose that Ephraim's restoration is the proverbial fig tree that needs to bud, and that Judah will have to get a graft from Messiah off of Ephraim's tree before it revives in a definitive sense. It is hard to say that any true flowering has come to Israel without Messiah or the repentance of his people, and a return to his Sabbaths.

Jewish Eras and the Sabbatical Year

In order to refute the Nazarene and Christian application of Daniel 9:24-27, Rabbi Yose Ben Halaphta contrived the theory presented in the Jewish work Seder Olam. According to this theory, there were 490 years from the destruction of the first Temple (587 B.C.) to the destruction of the second Temple (A.D. 70). To accomplish this trick, Halaphta had to implicitly delete 164 years of Persian History.[212] The rabbinic system of chronology was entirely based on this error. For it allowed the rabbis to deceive Israel concerning the times and seasons that point to Yeshua the Messiah.

212 See First, Michael, *Jewish History in Conflict*.

Halaphta taught that both Temples were destroyed in a post sabbatical year, and that the Second Temple was destroyed in the **491**st counting inclusively from the destruction of the First Temple. Furthermore, he claimed that the second temple was completed in the **71**st year from the destruction of the First Temple, so that the Second Temple stood for **420** years.

Halaphta passed the assumption that the destruction was in the 1st year of the sabbath cycle to his students. One of them, Rabbi Pappa (d. **A.D. 371**), converted the post sabbatical dating (1st year of the cycle) into the "era of contracts." This is the *Seleucid Era* or the *Greek Era* in the charts. Since Pappa and his contemporaries did not keep track of Roman chronology (with respect to religious chronology), he used knowledge of the sabbatical periods to pick the nearest post sabbatical year for the date in terms of the era of contracts. Pappa states that this was *anno* **380** *Seleucidae* (**A.S. 380**). There were two Seleucid eras in actual use. The Macedonian era places **380** in **A.D. 69** (R3-4208). The same is true with the second version, the Babylonian dispersions' Seleucid era (sometimes called the *Babylonian minhag*). The Babylonian date **A.S. 380** is **A.D. 69** (S3-4208).

The Rabbi's date correlated to AD 69. Accordingly AD 67/68 was the Sabbatical year, which indeed is exactly correct for the Sabbatical year. Halaptha built his theory using the correct Sabbatical cycle, which was remembered from sources extant in his day as it had been observed in Judea. Even if Halaptha wanted to change the Sabbatical cycle, he could not. Too many other Jews knew at that time when it was. But to make his theory work, he had to miss date the destruction of the Temple to AD 69. It is admitted on all sides that the true date was AD 70.

The wrong dates of failed eschatological theories, however, endure in the hopes of those who trust them. The wrong date of the Temple destruction endured for almost a thousand years before the Rabbis scheme was exposed as a year off. Meanwhile, all the exact sources as to when the Sabbatical year was had either disappeared, or had been rendered ambiguous with the passage of time, and the reinterpretations of other scholars with new theories and new frauds to promote. The anti-law Christians contributed a great deal to the chronological scramble.

Accordingly, sometime around the life of Maimonides, one camp of Rabbis came to accept that the Temple was destroyed in AD 70. On any normal day, Halaptha's theory would have to go down with AD 69, since the date was critical to his theory. However, the theory was as critical to the Rabbis scheme in Maimonides day as it was in Halaptha's. Therefore the fraud was amended: the sabbatical year was dragged over to AD 68/69. The result was two camps of Rabbis. One held that AD 67/68 was the Sabbatical year. This camp stuck with the original AD 69 dates. And the other held that AD 68/69 was the Sabbatical year. This camp revised the date to AD 70. The picture was complicated by additional Rabbis who supposed that the Temple was destroyed in the Sabbatical year itself.

Now sometime around the middle of the 5th century, the Jews introduced the World Era, which is the way they count years from creation. This era is affixed to column T. They proleptically counted this era back to creation, and mapped all of Halaptha's *Seder Olam* chronology onto it, including the errant AD 69 date for the destruction of the Temple in AS **380**. The Jewish year ended up being **3829**. This linkage became established before the errant AD 69 date was discovered since the era was introduced in the 5th century.

Now, some time after Halaptha's theory, the Jews introduced the *Era of Destruction* based on the supposed destruction date in AD 69. The era of destruction was proleptically applied to AD 69, such that year **1** counts on a Tishri basis inclusively from that year (Column G2 in the charts). This era was used to date the Zoar tombstones with the Sabbatical year references.

Now when the year of destruction was shifted forward to AD 70, the *Era of Destruction* had to move also (column H1). So year **1** would fall in AD 70. I fully charted this only after AD 1175, since while correct, it was not the era used.

Calculating the Sabbatical Year

The Jewish methods, and arguments over calculating the Sabbatical year are truly a comedy of errors, which owe their origin to Seder Olam, correcting the destruction date without discarding Seder Olam, and interpreting Seder Olam in different ways. We can however, make sense out of the basic methods:

> Rav Huna, son of Rav Yehoshua, said: "If one does not know what this year is in the shemitta cycle, let him add one year and let him put aside the centuries as yovel cycles and convert the remainder into shemitta cycles, after adding thereto two years for every complete century; what is left over will give him the number of the given year in the current shemitta cycle. Use as a mnemonic [for adding two years for every century]: 'For these two years has the famine been in the land' (Bereishit 45:6)." Avoda Zara 9b[213]

The first issue is concerning "add one." Ba'al Ha-ma'or cites a disagreement between the Geonim and the sages of Spain, whether Rav Huna's suggestion includes the words, "let him add one." The Geonim were the earlier Rabbis. The Sages of Spain included those who had later corrected the destruction date to AD 70. The change of the destruction date from AD 69 to AD 70 explains the disagreement.

The original rule as stated is to *add one* to the world era thus: **3829** + 1 = 3830. Then divide by 7 and find the modulus (remainder). 3830 mod 7 = 1. Thus the year of destruction (AD 69) is the first year of the cycle. This is correct. The rule, of course, presupposes that the Jubilee year is the same year as the first year of the cycle, following Rabbi Judah, which is also correct.

When the destruction date was corrected to AD 70, the Sabbatical cycle was incorrectly dragged along with it to preserve the internal integrity of the Seder Olam fraud. But now the rule had to be changed. Huna's requirement to *add one* had to be dropped. Therefore **3829** mod 7 = 0. So 3829 is now regarded as Sabbatical.

Huna's rule was not intended to apply to the *Destruction Era*, however there are those who so apply it, and accordingly end up with two errant Sabbatical years depending on whether they use the AD 69 version or the AD 70 version, namely Zuckermann's primary cycle and Ben Zion Wacholder's cycle. If the Destruction Era is to be used correctly, then only the AD 69 version can be used, and the rule is to divide by 7, and the remainder equals the year of the cycle. A zero remainder means it is sabbatical. This is easily proved. If the year of destruction is post sabbatical, then it has to be year 1 of the cycle. No one would think of counting this in any way other than inclusively, as the obvious equation of year one of destruction equals year one of the sabbatic cycle is too plain.

Here is the next rule:

> 8.Answer (R. Tam): The Siman teaches to deduct two years or add five, like the Seifa "v'Od Chamesh Shanim..." We count from when Yavan began to rule the world, in year 41 of Bayis Sheni. Their third year was (year 43, i.e.) Shemitah according to R. Yehu-

213 vbm-torah.org/archive/halak68/06halak.htm.

dah, therefore we must deduct two. The year 5011 or 5012 was Shemitah, depending on whether the Churban was in year 420 or 421.[214]

Of course this has to be deciphered for anyone who is not a chronological Rabbi! The *Era of Yavan* is one and the same with the *Era of the Greeks*, otherwise known as the *Seleucid Era.*[215] The rule is to either deduct 2 from the Seleucid Dating or to add five. Either method will work. This rule however is based on correcting the errant destruction date to AD 70 and dragging the Sabbatical year along with it. AD 70 = 381 AS. Let us then deduct 2: 381 - 2 = 379. 379 mod 7 = 1. Thus AD 70 is regarded as the first year of the cycle.

Rabbi Huna's original rule to *add one* to the Jewish World Era is correct. Add one. Divide by 7. The remainder 0 indicates the Sabbatical year. The other remainders show which year in the cycle it is.

Other Historical References to the Sabbatical year

Historians of the sabbatical cycle usually approach the subject using secular or non-biblical sources. The fair use of biblical sources leads directly to Daniel 9:24-27. Jews wish to avoid it for the obvious reasons, and Christians are normally not familiar with the sabbatical year. The field is abandoned to those with an interest in Jewish history and its consensus that Daniel 9:24-27 should not be touched with a ten-foot pole lest the historian electrocute himself on it. Thus, only secular sources are considered "safe".

The use of secular sources for any chronology, with the exception of the Neo-Babylonian, Persian, and Roman chronological benchmarks actually used by the bible is fraught with error.[216] The bible shows its divine inspiration by being the only exact source. Everything else is subject to interpretation and disagreements.[217] For every two Egyptologists there are two views of Egyptian history. Ditto for Assyria. Even the chronology of the Greek period devolves into chaos after the bible finishes using a little Persian history. If there is any hope of straightening it all out, then the bible is the key.

Trying to ascertain the sabbatical year from secular sources is truly a comedy of errors. Eventually reasoning proves to be circular, or sources truly ambiguous and even the source material cannot be entirely trusted. Unlike the bible, there are provable errors in these sources, which always leave the chronologist wondering if a key assumption is the part in error.

However, once the biblical sabbatical cycle is known using the bible, the comedy of errors can be straightened out. The mistakes of others can be understood, and some confirmatory value can be gained from the secular source, merely by being able to explain it. I have already demonstrated this in the preceding section with respect to the Hurban and Jewish opinions on the timing of the sabbatical year.

Some may feel that some of these external sources are concordant in supporting Zuckermann's primary cycle. Do they even realize that he allowed for a second cycle which turns out to be correct? Such concordance is purely a result of the reinforcement syndrome, and the chronological telephone game. If someone believes something is an error, and then they errantly correct it, and then they present the correction as fact. The next historian to use the corrected material does not realize that it is based on the reasoning of the scholar he is reading rather than real sources. The importance or anti-importance of when the Sabbatical year is, is too tempting a target. Scholars will treat them according to their presuppositions regardless of the evidence.

The Siege of Beth Zur

Judas fortified and garrisoned Beth Zur in AS 148 (164 BC) which was a Sabbatical Year. However, it could not be re-provisioned with any new crops during that year. The fortress was put under siege by Lysias' invasion, who was the regent General of Antiochus Eupator. The fortress surrendered the sooner because it had been placed under siege before it could receive new supplies from year one of the Sabbatical cycle. 2 Mac 13:1 gives the correct date of the siege as AS 149, but 1 Mac 6:20 says AS 150. The usual attempt to reconcile these discrepant datings depends on introducing additional versions of the Seleucid Era, and then assumes that various authors used them. This leads no where. Which source is right can only be determined by knowing when the Sabbatical year is already. Emend 1Mac 6:20 to AS 149.

The Murder of Simon

Simon was murdered in AS 177 according to 1Mac 16:14. The date has to be emended to AS 175 since the reign of Simon is too long by two years. This is shown by the coin evidence and the reign lengths of the remaining Hasmoneans, particularly the discrepancies on the length of John Hyrcanus' reign. In this case also, the discrepancies in the sources cannot be sorted out without already knowing when the Sabbatical year is supposed to be.

---

214 www.dafyomi.co.il/nedarim/halachah/nd-hl-061.htm.

215 To prove this, we take year 380 AS (AD 69). This is year 491 of Seder Olam (491 SO = 380 AS). 490 years earlier is the Seder Olam date for the destruction of the first Temple, i.e. -110 AS (1 SO = -110 AS). Seder Olam has 70 years to when the 2nd Temple is built. -110 + 70 = -40 AS (1 2nd Temp = -40 AS). Now add 40. -40 + 40 = 0. So the date 41 for the 2nd Temple refers to Year 0 AS. The same math with AD 69. 69 - 490 = -421. -421 + 70 = -351. -351 + 40 = -311. There is no zero year, so the date -311 is like an astronomical date. It equals 312 BC, when the Seleucid Era began.

216 It is a remarkable fact that the Neo-Babylonian, Persian, and Roman dates actually used by the Bible are the only reliable dates secular history can provide. It is as if God knew, or saw to it, that these periods would be preserved. The bible does not use dates before Nebuchadnezzar (**604 B.C.**) or after Artaxerxes II of Persia (**397 B.C.**). The next date we come across is the 15th year of Tiberius Caesar (**A.D. 29**). It is a fact that before **B.C. 44** the Roman Chronology is disputed, and that out side of these parameters, Greek, and Assyrian chronology is disputed. By using certain secular dates, God had validated them. But not using the others, he has disapproved of them, and has remedied the lack by providing the necessary figures from prophetic or official Judean and Israelite sources. Our effort to explain mistakes or correct problems in these other periods, therefore, is an autopsy on corruption, and must proceed by falling back on the accuracy of the bible. Once this approach is taken, new life will be breathed into these unknown periods, but it must never be forgotten that it is the bible that resurrected forgotten history!

217 I know that many recite the mantra that the bible is difficult to interpret, but this lie is usually promoted by those who do not wish to understand it simply because they do not like what it plainly says.

Herod's Conquest of Jerusalem

Josephus' consular dating of the fall of Jerusalem to Herod is incorrect. The Roman Historian Dio Cassius has the correct dates. *Dio Cassius* 49.22-23. See also Book *48*. *Dio's* history gives a list of consular dates at the beginning of each book, and it is clear that the Pocorus the Parthian was killed in B.C. 39, and that Sossius went to Herod's aid in B.C. 39 after the victory at Samosata. Dio then gives the consular dates for B.C. 38 for the fall of Jerusalem and the slaying of the last Hasmonean king Antigonus.

Caligula's Statue

In the fall of **A.D. 40**, after Tishri **1**, Josephus records an attempt of Caligula to place a statue in the Temple at Jerusalem (Ant. 18:272-274)[218]. However, he says that this interrupted the time for Jewish farmers to plant their fields who went to protest the edict. If the sabbatical year had been **A.D. 40/41** per Zuckermann's cycle, then the only agricultural reference could be Jewish farmers abandoning harvesting in the summer of **A.D. 40** prior to the supposed sabbatical year. However, Josephus says they abandoned planting, which must refer to the fall of **A.D. 40.** This was after Tishri 1. Therefore, **A.D. 40/41** cannot be a sabbatical year. There is a similar difficulty with Simon's plundering of Idumea during the first revolt in 69/70. See the charts.

218 Josephus is truly the primary source on the history of Caligula's statute, and not Philo. A plain reading of Philo shows that they had sailed before the edict came down, and they arrived to find out about it. Also Philo's reference to crops that Petronius feared might be destroyed apply to non-Jewish crops around Ptolemais.

The 2nd Year of Nero

A document dated to the **2**nd year of Nero says, "I will pay you in five … it would be a year of release." Year **2** of Nero is the **2**nd year of the sabbatical cycle. Counting inclusively, years **2, 3, 4, 5,** and **6** are **5** years, and in the **5**th year, payment is expected before debts must be canceled in the sabbatical year, *anno* **4199**, **7/35**. Attempts were made to translate the key words "it is a year of release" rather than "it will be a year of release."

The Bar Kochba Revolt

The Bar Kochba revolt began in the spring of **AD 132**, and the *First year of Redemption* (which was used on the coins) was the Tishri year **AD 131/132.** The revolt datings are consistent with the usual Tishri epoch dating procedure for Judean regnal years. A Papyri from Wadi Murrabba'at (24E) was a land rental contract for five years of production until the Sabbatical year. It was dated to the second year of the revolt, corresponding to Tishri 132/133. Counted out according to the harvest summers, the years are 133, 134, 135, 136, 137. The Sabbatical year comes in 137/138. J.T. Milik, one of the Dead Sea Scroll scholars, dated the previous Sabbatical year to 130/131 on the basis of Mur 24E.

Zoar Tombstones

I have dated a number of Zoar Tombstones using the destruction era and the Sabbatical cycle within the charts. The Churban era starts in AD 69, and the dates are consistent with the sighted new moon. Sacha Stern concludes with a null result slightly in favor of conjunction dating of months, but he has wrongly assumed that the Churban in use began in AD 70.

The End of Days

The *End of Days* refers to the eschatological end of the age. Every speculation about this time is a theory. Just as the Apostles thought that the end time was upon them in the first century, and they were proven wrong, so also God could find a way to prove any speculation wrong. However, it is allowed to make the best prediction we can. After all, the Apostles did not keep their opinions a secret.

Many churches believe in the doctrine of *an any moment coming of Messiah*. This means that they think that Christ can return at any moment without notice and without any other events having to happen first.[219] This doctrine keeps them from searching into any possible times that He might return. However, what does the scripture say? "And he said unto them, 'It is not for you to know the times or the seasons, which the Father hath put in his own power'" (Acts 1:7), and "But thou, O Daniel, shut up the words, and seal the book, *even* to the time of the end: many shall run to and fro, and knowledge shall be increased" (Daniel 12:4). Therefore, it is not for Israel to know the times and seasons *until* a certain time. Daniel said, "I heard, but I did not understand." He asked, "My Adonai, what will the outcome of all this be?" The reply was, "Go your way, Daniel, because the words are closed up and sealed until the time of the end.[220] Many will be purified, made spotless and refined, but the wicked will continue to be wicked. None of the wicked will understand, but those who are wise will understand" (Daniel 12:10).

Read that again, "Those who are wise will understand"! What do I say about this? Many will come and insult this book because they do not understand. Even when it is in front of them, and everything is explained, they will not understand. Even though knowledge has vastly increased so that we can calculate dates far in the past using the work of Sir Isaac Newton, they will not understand.[221] Even after archaeologists have unearthed thousands of tablets in Babylon and other places, they will not understand. Only those who are righteous and commit themselves to the foundations of the times and seasons will really *understand*. What the intellect of the wicked may see and fear will not be grasped by their hearts, which is where true wisdom and understanding begins. For the fear of Yahweh is more than knowledge, but acting righteously toward Yahweh based on that knowledge.

Now Yeshua speaks of the wicked who will not understand, "As it was in the days of Noah, so it will be at the coming of the Son of Man … they knew nothing about what would happen until the flood came and took them all away. That is how it will be at the coming of the Son of Man" (Matthew 24:37-39).

Nevertheless, Noah knew. For Yahweh says, "My Spirit will not contend with man forever, for he is mortal; his days will be **120** years" (Genesis 6:3). Noah also knew that man could not live more than **1000** years, and that Methuselah's name meant, "dying it will come". Moreover, God told him the exact day of the flood a week in advance, "Seven days from now I will send rain on the earth for forty days and forty nights, and I will wipe from the face of the earth every living creature I have made" (Gen. 7:4). God kept Noah informed, "because I have found you righteous in this generation" (Gen. 7:1).

Yes, it is in the nature of God to tell the righteous when He will act.[222] He told Israel how long the Babylonian exile would be. He gave the means to calculate when the Messiah would come in Daniel 9:24-25. God has not been stingy. For just about every important event that ever happened, He gave advance prophetic notice of when it would happen. The Exodus was predicted **400** years in advance. After they sinned, God said it would be **40** years until the entry into the land. God predicted the year of Hezekiah's death **15** years in advance. God predicted the scattering of Ephraim **65** years in advance.

Therefore, the righteous shall understand at the right time, but the wicked will not understand at any time. For the wicked, the coming of Messiah will be truly imminent! Noah understood, but those living licentiously did not. After noting the wickedness of mankind in Noah's day, what does Yeshua say? "Therefore keep watch lest you do not know on what day your Adonai will come" (Matthew 24:42), and, "So you also must be ready, lest[223] the Son of man comes at an hour you do not suppose" (Matthew 24:44). The best way of watching is to observe the times and seasons of redemptive history. For example, taking note of the sabbatical periods and Daniel 9:24-25 would have allowed one to recognize the first coming of Messiah. Observing the Passover would have enabled one to understand the redemptive lessons of the Passion. Indeed, all the sacred times and seasons play a part in the End of Days.

It is also written, "No one knows about that day or time, not even the angels in heaven, nor the Son, but only the Father" (Matthew 24:36). While this was true at first, for those who watch, there will come a point in time when they will know.

Daniel's 70th Seven

In this edition, I have modeled the end of the age in the sabbatical period beginning in AD 2077 in the fall. I don't know if the end will occur on this Sabbatical cycle or not. The scenario opens with the preaching of the two witnesses starting on Tishri 1. In column F1 I have put in the months of the years as they are calculated out, with the 13th month in its proper places.

---

219 Clearly those who believed Daniel 9:24-27 did not believe in an any moment first coming.

220 Not only does this say the book is sealed, but it also predicts that it will be unsealed at the time of the end.

221 Newton invented *Calculus* and developed a theory of gravity by which we can calculate the orbits of the heavenly bodies. Newton was a student of Daniel 9, and even predicted that Christ would return around **A.D. 2060**. Sadly, though, he rejected the deity of Messiah.

222 In fact, God says so, "Surely Adonai YHWH will do nothing, but he revealeth his secret unto his servants the prophets" (KJV Amos 3:7).

223 I take the Greek, ὅτι ἢ οὐ here, to be equivalent to ἵνα μὴ. Matthew 24:50, "The master of that servant will come on a day when he does not expect him and at an hour he is not aware of." This context makes it certain that Yeshua meant the ὅτι ἢ οὐ phrase to be conditional, pointing to those who are not watching. If the passage were unconditional and universally applied, then there would be no point of watching to avoid being "unaware" of the "day" and "hour".

Most of the other periods start in the middle of the Sabbatical period at different points indicated by the calculations. The deprivation of the Temple takes three steps. First the daily offering is cut off kicking off the 42 months. Second the altar is defiled beginning the 1290 days, and thirdly is the prophesy of 2300 settings and daybreaks. This is a cipher for 1150 daily offerings, since there are two in each day, one at daybreak, and one in the afternoon.

The 1150 days ends first in the 42nd month, and then the 42 months end. The other periods end of Yom Kippur, the day on which the dead will rise again

Seventh Day Adventist Eschatology

Seventh Day Adventist Eschatology was established by the prophetical speculations of William Miller and the visions of prophetess Ellen G. White long before Adventists accepted the Sabbath from Seventh Day Baptists. Miller's speculations would have died long ago were it not for Ellen White's visions, and the fact that Christians desire to follow someone who claims to speak the words of the Almighty. Let me make clear that it is not just the Seventh Day Adventists that desire to follow a prophet. Christians everywhere like to follow people who claim to "hear from the Lord," or who say "The Lord told me...."

Christians regularly claim "The Lord told me..." and then they tell their audience what the Lord told them, expecting their audience to believe them on the same basis as if they were a witness to the words of a friend. Anyone who basis their teaching on this method of proof is bound to be deceived. Most people who say "The Lord told me..." have received a subjective impression in their mind; however, there are many saying this who have received an objective word from a source outside their mind. Therefore, it is impossible to tell the difference when someone says, "The Lord told me...." The temptation to power and authority over others is so great that most saying these words have presumptuously seized upon the power of those words, yet they are speaking impressions from their own minds. Many have simply slipped into the habit of using these words by virtue of charismatic peer pressure.

I will tell you how I think I get my answers. First, I face a problem that I know would be difficult for me to solve using my own abilities, powers, and education. So I pray to the Almighty for an answer. Most often I receive a subjective answer in my mind. Something pops into my mind that I did not think of, a connection I had not made before occurs, or a fresh avenue of research to pursue is suggested. I believe that He tells me things because the Scripture says He has given us his Holy Spirit to teach us. That is the objective basis. However, it appears to me that the Spirit likes to lead us, and answer our prayers, precisely in ways to prevent us from presuming on it as a source of objective revelation. The Scriptures, at this time, are a sufficient source of objective revelation. A new prophet shouldn't be necessary.

Therefore, I put little faith in the truth of what I think I have heard until it can be confirmed and proved outside my mind, i.e. by Scripture, by historical truth, by chronological calculations that correctly work out. And I don't expect anyone to believe me because something popped into my mind. And I don't present such mental notions as "The Lord told me..." I trust that he leads me, but I don't know that I've been led until the external facts prove the leads were valid. I expect no one to trust what I present except on the basis of Scripture and objective truth. Yet I encourage everyone to ask God for answers, and then when they get a lead, to wait for objective proof of the matter. Indeed, most often God answers a prayer by simply notifying us where to look for the answer in the real world. If you will do this, then he will lead and teach you. You have no need of another to take authority over you. For every child of Messiah has access to His Spirit.

I do have a problem with teachers that combine "The Lord told me...." as part of their method of proof concerning what they teach. The facts they present might seem to prove a matter, but then when there is a discrepancy, the teacher's pretensions of hearing from God are put in place as the answer to the discrepancy. Often times the word of the supposed prophet trumps all other evidence, and is the absolute used to settle the argument. The prophet is claiming that what they have "heard" is equal to Scripture in authority to decide a matter, even when their teaching is discrepant with Scripture itself.

There are a lot of false prophets, small and great. The small one's are hard to catch, because they have not built up a track record, nor have they misled large numbers of people.

Now what about Ellen White? If you have studied this chronology carefully, then you will already know what is wrong with SDA chronological eschatology. I will simply summarize here. A. Fall of 457 BC was the 8th year of Artaxerxes I, and not the 7th year, B. Ezra's administration was after Nehemiah in Artaxerxes II, and fulfilled the seven sevens. C. The Adventist date for Messiah's baptism disagrees with the 15th year of Tiberius. D. The Adventist date for the crucifixion (AD 31) disagrees with their teaching of a Friday crucifixion, since Passover was not on a Friday that year. Aviv 14 fell on a Tuesday, and a month later the second Passover, II.14 came on Wednesday. E. The completion of the 70th seven in AD 34 is premature since everlasting righteousness did not come for Jerusalem or Israel.

So Ellen's teaching is incorrect. But since she claimed that God revealed to her that it was correct, we have to judge her a false prophet: (Deut. 18:20). Is there any other evidence that she falsely prophesied, or that she lied? Indeed. Ellen claimed, "**The words I employ in describing what I have seen are my own unless they be those spoken to me by an angel, which I always enclose in marks of quotation**." (*Review and Herald*, Oct. 8, 1867). It has been proved by the Adventist Church itself that these words are untrue. Ellen plagiarized most of her writings. This proof is provided by Dr. Fred Veltman who was hired to investigate the plagiarism claims. What he found confirmed it.[224] His research project as of this writing is still posted on the General Conference website.[225]

So Ellen was dishonest. Did she falsely prophesy the second coming? The White Estate admits that she did:

> Concerning a conference in 1856 Ellen White declared: "**I was shown the company present at the conference. Said the angel, 'Some food for worms, some subjects of the seven last plagues, some will be alive and remain upon the earth to be translated at the coming of Jesus.**' " All who were alive then are now dead. Does this unfulfilled prediction mean that Mrs. White is a false prophet? We offer a more extended answer to this question because it illustrates a fundamental misconception regarding the gift of prophecy.[226]

The White Estate's answer is that the Scripture teaches conditional prophecy, and that Ellen's failed prediction was a conditional prophecy just like other supposed failed predictions of bib-

224 http://www.ellenwhiteexposed.com/egw76.htm.

225 http://docs.adventistarchives.org OR http://documents.adventistarchives.org. Search for "Veltman report".

226 http://www.whiteestate.org/issues/1856visn.html.

lical prophets! Therefore, in defense of Ellen they attack the Scripture itself. The White Estate provides several examples attempting to prove that legitimate prophets are allowed to make failed prophecies without being judged as false prophets, which is contrary to Deut. 18:20-22 and Num. 23:19-20.

First is Jonah, "Yet forty days, and Nineveh shall be overthrown" (Jonah 3:3,4. cf. Jonah 3:5,10). The prophecy is carefully stated, "Yet forty days...." This means that the forty days could be extended *if they repent*, but that it will be forty days if they do not repent. The wording reflects a conditional element present in the larger context. We know that the prophecy is conditional because that is the way that the Ninevites understood Jonah's words, "Who knows, the Almighty may turn and will have been sorry, and will have turned his burning anger, and we will not perish" (Jonah 3:9). Also, all that Jonah said is not recorded in the book. Only the central theme of his preaching is included. Therefore, the Ninevites could have learned that the countdown might be suspended if they repented. They did learn this, and Jonah knew it, because he himself expected the Almighty not to act if they repented: "Ah Yahweh was this not my word as long as I was on my own soil?" (Jonah 4:2). Therefore, Jonah himself bears witness to the fact that he had said as much at least once before he went to Nineveh. We may correctly infer he repeated it to the people of Nineveh.

The forty days countdown was like a countdown to a space launch, where controllers can and do regularly extend the countdown when contingencies or problems arise. I have seen the countdown suspended more than once in a launch procedure. Yet the newscaster will still say there are "still 2 minutes left on the countdown," and then he will say "Mission Control has stopped the countdown at 15 seconds" and then again, the countdown has now resumed." Jonah 3:10 says, "Then the Almighty saw their deeds, that they had turned from their wicked ways; then he was sorry concerning the calamity which he had caused to be spoken, to happen to them, and he did not act." What is implict here is that he did not act at that time. He suspended the countdown since it was possible to do so within the wording of the prophecy.

The usual allowed conditional element in prophecy is the timing of when it will come to pass, which is based on the whether there is repentance or not. Like the laws of the Medes and Persians, Yahweh's word cannot be undone (cf. Num. 23:19). But if the prophecy includes an absolute terminal point on the timing, then even timing is not conditional. The Jonah prophecy does not include an absolute timing endpoint. Nineveh was overthrown in 612 BC, about 210 years after the generation that repented, and the key word "Yet" at the start of the text prevents the word from being false.

Ellen's prophecy includes the words, "I was shown the company present at the conference." These words put a timing closure for fulfilling the prophecy in that generation, which is now all dead. It would be special pleading to claim that God would raise them from the dead just to make Ellen's words true. But that is not the defense offered by the White Estate.

The White Estate offers Jer. 18:7-10 as a defense:

> At one moment I might speak concerning a nation or concerning a kingdom to uproot, to pull down, or to destroy it; 8 if that nation against which I have spoken turns from its evil, I will be sorry concerning the calamity I planned to bring on it. 9 Or at another moment I might speak concerning a nation or concerning a kingdom to build up or to plant it; 10 if it does evil in My sight by not obeying My voice, then I be sorry concerning the good with which I had promised to bless it.

Please note that Yahweh did not say he would not do the blessing or the curse. He only said he would be sorry concerning it, and it is only implied that he might not act on his word right away, i.e. at the moment he spoke. And he will only delay the matter if his promise allows that contingency. And certainly the examples in Scripture, involving cases where Yahweh was sorry for a judgment or a blessing, because of a change of heart on the part of the subjects, involve only a delay of the promise, and not a rescinding of what was promised.

Only the timing is conditional in such cases. He only relents to bring the blessing or curse at the *moment* he spoke. The Word of Yahweh is not contradictory, "God is not a man such that he must lie, neither the son of man, that he should repent. Has he said, and shall he not do it? Or hath he spoken, and shall he not make it good. Behold, I have received commandment to bless: and he hath blessed; and I cannot reverse it." (Num. 23:19).[227] Now of course the blessings for Israel were conditional on obedience, yet this cannot be reversed, because in the end of days, Israel will be obedient. Only the timing is conditional. Messiah simply waits and prepares for the obedient generation.

Using White Estate false teaching on conditional prophecy, I have heard some deny that prophecy concerning literal Israel will be fulfilled because it is only conditional. If prophecy is conditional in the sense that the words are not literally to be true, then the Scripture cannot be trusted, nor prophets.

The White Estate calls Exo. 6:2, 6-8 (cf. Num 14:26-34) a case where God "reversed" his promise. Not so. It says "Speak unto the sons of Israel..." it being understood that only obedient sons would receive it at the right time. And two sons did. Joshua and Caleb, and also the children of the disobedient ones.

If the White Estate's theology were true, then there would be no way to detect a false prophet, and there would be no way to trust the word of a true prophet. Now since there really is such a thing as conditional prophecy in the sense that the timing is left uncertain by the words of the prophecy, I need another phrase to describe the false notion of it: *conditionally false prophecy*. This means that the prophecy proved false in the timing conditions stated in the prophecy. Not only does the White Estate teach *conditionally false prophecy*, so also do charismatics, emergent church types, and many other deceived Christians. Do not follow them. Do not use a lie to defend a lie.

The kingdom of God is like a field of grain where an enemy sowed weeds that look like the grain. If the weeds are pulled up, then some of the grain will come up with it. There are many, who are good grain, in whose lives the Almighty has intervened, in the Adventist Church, and in many other Churches. There are weeds that look like grain everywhere, and some of them are so bad that they must be pulled, and some of them that cannot be pulled lest the grain be destroyed.

What about the case of Ellen White?. Ellen was a weed that should have been pulled, but then she got the Sabbath from the Seventh Day Baptists, and she adopted Biblical food laws, and then they corrected the false teaching of everlasting torment, and the sleep of the dead. And they taught and maintained the doctrine of creation. And they taught against Calvin, and taught

227 Lest it be objected that Balaam was not a true prophet, it must be noted that he was constrained by Yahweh to say only what was true (cf. Num. 22:20), and the Messenger of Yahweh was angry enough to kill Balaam lest he disobey Yahweh and not say only what he was bidden to say (Num. 22:22-31; Num. 22:35; 22:38; 23:5, 12, 16-20). Therefore, everything Balaam said was true.

Arminius. And it so turned out that Ellen could not be pulled without pulling up the grain too. This is because when Fundamentalists were adopting the gap theory and the ruin and reconstruction theory, and evolution, and when other denominations were going liberal, the Adventists carried the banner of truth on these matters, and they passed their faithfulness in these matters onto the modern creation movement. It is now necessary for Adventists to personally pull the weeds in their own Church out of their own lives before the Church is swept away by the same liberalism that swept away other Churches. For the teaching of *conditionally false prophecy* will surely lead to loss of faith in God's word.[228] The exposure of Ellen has reached the point, that it cannot be denied, and where it is denied, it is only to the hurt of the truth in the eyes of those seeking it. The Adventist Church harms themselves more by digging in.

The White Estate did not use a number of passages in their defense of Ellen. I will mention one. The prophet said to Hezekiah, "Thus says Yahweh, give an order to your house, because you are dying, and you will not live" (2Kings 20:1). What is understood here is that the statement is an observation based on the natural course of events, "For you are dying." If Yahweh interrupts the process of dying, then the conclusion will not follow, i.e. "you will not live." Now a doctor may say the same to his patient when he is terminally ill. Will the doctor be called a false prophet when the patient recovers? No. In such cases, it is always implicit that the observation will be true unless a miraculous healing takes place.

There is no such thing as *conditionally false prophecy.* Every prophecy will meet all conditions verbally stated by the true prophet, whether in detail, or in timing. It is not legitimate for a reader to assume the words of a prophecy can never come true as they are written, or did not come true as it is written. The principle cases offered up by the opposing argument only show that they have assumed the prophecy did not come true as written. And such cases are only offered to justify false prophets or to justify rejecting important prophecies that do not agree with the theology of the reader.

Is Messiah Coming Soon?

Even now Messiah is coming with haste. Through the Spirit He has an itinerary he must complete bringing the good news to the nations, and restoring the kingdom to Israel, and putting down the coming man of sin, before he can come in glory. Everywhere, even in Spirit, the Messiah makes haste. In this sense he is coming even now, with speed, but the road is long. He is the bridegroom coming to take his bride. His coming, therefore, should be viewed as something that is currently in progress.

So in Rev. 2:16, "I am coming to you quickly" means at least in Spirit in the short term, with "the sword of My mouth," but as to his physical coming the road is long, yet he is coming even now in Spirit. This is no rescuing device to save Scripture from being falsified. The "I am coming" passages are covered by the English present progressive. The mother says to her demanding child, "I am coming, I am coming" while she closes the refrigerator, puts the child's abandoned dish in the sink, picks up toys in the hall way, gives the baby in the next room a bottle, and then arrives at her child's door, who needed his shoe tied." Such an understanding is evident in more ancient prophecies about Messiah's coming.

It is evident in Hab. 2:3, "For the vision is yet for the appointed time; he pants toward the end, and he will not be false. When he delays, wait for him; For coming he shall come, he will not be detained." Messiah comes in Spirit, with haste, even now, as the bridegroom comes to fetch the bride according to Jewish tradition. Therefore, what is meant by "soon" is "quickly—with all possible haste." So also in Rev. 3:11, "I am coming quickly," which means he is is coming even now in Spirit and is making all possible haste. "Coming he is coming" to rescue his firstborn son Israel. So also in Rev. 22:7, 12, and 20, "I am coming quickly" means that Messiah is on the road hastening in Spirit.

Most translations of John 2:18 say it is the "last hour," however in the original language this is the same as saying a "critical moment" or an "extreme hour." The the apostasy of most Christians in his time to Gnosticism was such a time. They were not keeping watch, guarding the commandments of Messiah, but left their duties and exchanged it for feeling spiritual while indulging in sexual immorality or teaching indifference to it. Those holding this doctrine are spiritually sleeping. The coming of Messiah will surprise them because they will be apprehended for judgment.

When Yeshua says "Therefore be observant—*lest* you do not recognize which day your Adŏnai is coming...For this reason you be prepared too; *lest* the Sŏn of Man is coming at an hour when you do not think *he will*." (Mat. 24:42-44) The Hebrew word for "observe" is *shamar.* The word *shomrim* means watchmen. The word also means "keep" or "guard." Therefore, if we keep his commandments and do our duties we keeping watch, and his coming will not catch us off guard whenever it comes, whether we die first and are raised, or live until the time. If we keep his commandments, then we will be ready and doing as he instructed us to do at the appointed time of his coming. On that day, he will cleanse us from all our sins. From all our sins we will be clean before Him, just as he is cleansing all who confess their sins at the present (1John 1:9).

---

228 I am, in principle, against conditionally false prophecy. The principle of *prophetic integrity* is a presuppositional requirement, that must be defended at all costs. We should sooner conclude that a passage was a scribal error, or falsely interpolated into the text than to conclude that the Almighty so contradicts himself.

THE RESURRECTION SCORECARD

The correct date is AD 34 with the crucifixion on Wednesday and the Resurrection at dawn on the Sabbath. AD 33 is taught by Evangelical Fundamentalists with a Friday crucifixion. AD 32 is Sir Robert Anderson's obsolete view with a Friday crucifixion. AD 31a is the Seventh Day Adventist position with a Friday crucifixion. AD 31b is the World Wide Church of God's revision of the Adventist position to a Wednesday crucifixion. AD 30a is Graham Scroggie's attempt to impose a Wednesday crucifixion on AD 30. AD 30b is the standard Roman Catholic view with a Friday crucifixion. AD 30c is Floyd Nolen Jones attempt to impose a Thursday crucifixion on AD 30. AD 30d is Alfred Edershiem and Torrey's theory of a crucifixion on Nisan 15, and is likewise a critique of any other groups or groups within the other groups attempting the same arrangement.

Criterion	100% 34	16% 33	9% 32	7% 31a	37% 31b	33% 30a	12% 30b	26% 30c	5% 30d
1.First Visibility NM	Y	Y	N	N	Y	N	Y	N	N
2.Correct Intercalation	Y	Y	NA	NA	N	NA	Y	Y	Y
3. Matthew 12:40	Y	N	N	N	Y	Y	N	Y	N
4. Buying Spices	Y	N	N	N	Y	Y	N	N	N
5. 15th Tiberius	Y	Y	N	N	N	N	N	N	N
6. Luke 13:6-9	Y	N	N	N	N	N	N	N	N
7. Newton's year	Y	N	N	N	N	N	N	N	N
8. Zeitlin's year	Y	N	N	N	N	N	N	N	N
9. Scaliger's year	Y	N	N	N	N	N	N	N	N
10. Mark 8:31	Y	N	N	N	Y	N	N	Y	N
11. 3rd day	Y	N	N	N	Y	Y	N	N	N
12. No Silent Wed	Y	N	N	N	Y	Y	N	N	N
13. Luke 24:21	Y	N	N	N	N	N	N	Y	N
14. Mat 28:1, Later	Y	N	N	N	N	N	N	N	N
15. Mat 28:1, dawning	Y	N	N	N	N	N	N	N	N
16. John 20:1, dark	Y	N	N	N	N	N	N	N	N
17. Lev 23:15	Y	N	N	N	N	N	N	N	N
18. first of Sabbaths	Y	N	N	N	N	N	N	N	N
19. John 19:31	Y	N	N	N	Y	Y	N	Y	N
20. Firstfruits	Y	N	N	N	N	N	N	N	N
21. John 19:14	Y	N	N	N	Y	Y	N	Y	N
22. John 2:20	Y	Y	Y	N	N	N	N	N	N
23. day+night	Y	N	N	N	N	N	N	N	N
24. Mark 15:46 linen	Y	Y	Y	Y	Y	Y	Y	Y	N
25. Time to Embalm	Y	N	N	N	Y	Y	N	N	N
26. 1st Sab after Pass	Y	N	N	N	N	N	N	N	N
27. 1st Sab visits	Y	N	N	N	N	N	N	N	N
28. Nisan 16 Wave	Y	Y	Y	Y	N	N	Y	N	N
29. Refute Karaites	Y	N	N	N	N	N	N	N	N
30. Agree with Dan 9	Y	N	N	N	N	N	N	N	N
31. Explain Acts 20:7	Y	N	N	N	N	N	N	N	N
32. Didascalia	Y	N	N	N	Y	Y	N	N	N
33. =Essene Passover	Y	N	N	N	Y	Y	N	N	N
34. Patristic Tue LS	Y	N	N	N	Y	Y	N	N	N
35. Confirm Bib. Chron.	Y	N	N	N	N	N	N	N	N
36. Confirm Jubilee	Y	N	N	N	N	N	N	N	N
37. !deny preparation	Y	N	N	N	Y	Y	N	Y	N
38. !deny feast days	Y	N	N	N	Y	Y	N	Y	N
39. Hos 6:3 dawn	Y	N	N	N	N	N	N	N	N
40. Nisan 10 anoiting	Y	N	N	N	Y	Y	N	N	N
41. Seven Sevens expl.	Y	N	N	N	N	N	N	N	N
42. After 3 = On 3rd	Y	N	N	N	N	N	N	Y	N
43. Within 3 days	Y	Y	Y	Y	N	N	Y	Y	Y

THE CRITERIA

1. Jewish calendar dates are computed according to the first date upon which a visible crescent new moon may been seen. Improvements in astronomical calculation and calibration by ancient eclipses in the 20th century require a red light for A.D. 32, 31a, 30c, and 30d. Grace Amadon valiantly tried to rescue A.D. 31a in the Journal of Biblical Literature, but was conclusively defeated by Richard Parker.
2. Adar II was intercalated in the spring of A.D. 32, just before the beginning of the Sabbatical year A.D. 32/34. The next Adar II was intercalated in the spring of A.D. 35. The rule for Aviv (Nisan) is that the Passover must occur as soon as possible in the new year, i.e. after the spring equinox. This is equivalent to saying that Passover agrees with the first full

moon after the equinox, as the Catholics would state it, or with the new moon nearest to the equinox. The Rabbis will say that the 15th of the month must fall on or after the equinox. This should probably be refined to say that that sunset beginning the 15th should fall after the precise equinox. This rule agrees with the average (year over year) peak barely, which is just before the equinox. The biblical method of intercalation did not agree with the Babylonian method which followed the rule of always taking the new moon after the equinox. The Babylonian calendar added Adaru II in the spring of A.D. 33, which was a sabbatical year. It is not according to Jewish halakah to intercalate the sabbatical year. The only view to really fail this question is Wednesday view for A.D. 31, since it is required to add an Adar II in this year at an unlikely time.

3. This is the famous "three nights" question. There have many attempts to evade an honest answer to this question, such as invoking inclusive counting. However, none of the examples produced, such as Esther's fast, the abandoned Egyptian, or Rehoboam's order that the people return three days later, require a chronology with less than three nights. This reasoning is nothing but an elaborate bluff, and as it turns out inclusive counting is the best friend of the biblical chronologist.
4. According to Mark 16:1, the Sabbath passed, and then the women "bought" spices. It is hardly likely that they would have gone out to buy them after sunset on Saturday night, and even less likely before sunrise on Sunday morning. They would have felt no rush because the body had only been in the grave 37 hours in the traditional view, which is not nearly long enough for anyone to worry about a rot so bad as to preclude a normal purchase of spices and a visit at a more normal time. Therefore, the purchase took place between the festival Sabbath and the weekly Sabbath.
5. Tiberius was voted the successor of Augustus on September 17th, A.D. 14. Catholic scholars attempt to get around this by supposing that Tiberius' years were reckoned according to his joint-rule. Despite the fact that Tiberius held official positions before A.D. 14, the supposition that regnal years were reckoned to Tiberius in any official sources while Augustus was still alive is an argument *en silencio*. It is not parsimonious to the sources, the situation, or normal Jewish methods. Therefore, any view that cannot accommodate a normal reckoning with at least a three year ministry for Yeshua is given a red light.
6. The parable of Luke 13:6-9 shows that Yeshua's ministry had been active for three years, and that an additional year would take place. To this we may add that John mentions three Passovers. Luke 6:1 alludes to another Passover, and Luke 13:1-5 strongly suggests that Yeshua was on a journey and not present at the first month Passover for A.D. 33.
7. Sir Isaac Newton after an intensive study of Messiah's chronology concluded that His ministry was four years long and that he died in A.D. 34. Newton was the worlds foremost Mathematical genius and an intense scholar of biblical chronology.[229]
8. Solomon Zeitlin was the most prolific Jewish scholar to write on chronological matters in the 20th century. He published numerous papers in the *Jewish Quarterly Review* and *The Journal of Biblical Literature*. He concluded that Yeshua died in A.D. 34 after a four year ministry based on his own study.[230]
9. Joseph Scaliger's first date for the crucifixion year was AD 34. He is the father of modern biblical chronology.
10. In Mark 8:31 and Matthew 26:63 Yeshua says that he would rise "after three days". We may locate two more texts that say the same thing in the Greek texts, Mark 9:31, and 10:34. One never says "after one day" when it is just one hour after an event on the same day. It was not "after one day" on the day of Yeshua's crucifixion until after sunset. Then one could say 'after one day'. Clearly, the Friday to Sunday chronologies can only obtain "after two days" by Sunday morning. Therefore they earn a red light. So also Bullinger's and Scroggie's view because they wish to wait till after sunset on Saturday in order to save "Sunday"! This reckoning is according to the lunar calendar where the day begins and ends with sunset. For the new moon is first seen at sunset, and thus a sunset reckoning of the lunar calendar is the norm.
11. There are numerous passages that tell us the resurrection was "on the third day". What we have here is another method of counting days, namely according to the sun. With the sun, the day begins at sunrise, and lasts till sunrise before the next day will begin. It is well known that the Temple calendar followed a sunrise day. The crucifixion was on the first day (sr. Wed to sr Thur). The third day was sunrise Friday to sunrise on Sabbath. The resurrection was in the pre-sunrise dawn of the Sabbath. So when Yeshua said he would rebuild this "temple in three days" he was using the sunrise day. However, technically the third day from Friday begins at sunrise on Sunday. Since the resurrection was "while still dark" (because the stone was removed: John 20:1),[231] the traditional view actually in unable to place the resurrection itself on the third day.
12. Not even F.N. Nolen Jones can avoid the necessity of the embarrassing "Silent Wednesday" in his chronology. This requires a harmony of passion week that covered every day except one: Wednesday. Why is this? Because moving the crucifixion from Wednesday to Thursday or Friday opens up a gap in Passion week.
13. Luke 24:21 states "But we were hoping that it was He who was going to redeem Israel. Indeed, besides all this, a third day passed today from when these things happened." Wednesday-Sabbath afternoon views place the trip to Emmaus on the 5th day, counting inclusively. Friday-Sunday views beg the question as to why the remark was made at all

229 Newton's chronology postponed the year to the second month. He then applied the postponement rules of the Hillel II calendar. These mistakes are forgivable in the 17th century, but it has been shown that the Hillel II calendar was not used in the first century. While this allowed him to arrive at a Friday to Sunday theory, his use of the postponements was totally anachronistic.

230 Zeitlin always held that there was a contradiction between John and the Synoptics. If he put forth an explicit chronology, I have not yet found it.

231 We may also reason that it was still dark when Miryam did not recognize Yeshua thinking he was the "gardener". For he tells her not to touch him, yet in Matthew 28:9 after the day had begun they are allowed to touch him! The reason is that he had not ascended yet to appear in heaven "for your acceptance" (Lev. 23:11), which must take place before sunrise, since that was the end of the third day, and he must remain ritually pure to enter the heavenly temple. Therefore it was still dark.

when three days had not expired. Only the true view and Nolen Jones come away unscathed by this chronological notation.

14. This is the unlucky question. For every view, save Sabbath-dawn, earns a red light. Ὀψὲ δὲ σαββάτων, τῇ ἐπιφωσκούσῃ only means *Later yet of Sabbaths at the dawning* …" Besides ignoring the plural "Sabbaths" the translators attempted to make "opse" mean "after" the Sabbath. This rendition is questioned by Thayer, doubted by Liddell and Scott, and categorized as an "improper preposition" by the grammars. It makes no linguistic sense, but when the correct chronology is in view, it makes perfect sense to translate it normally as a substantive adjective "the late *one* of the Sabbaths..."
15. One might accuse me of being unfair by flagging the Friday-Sunday views here, but "dawning" (Matt. 28:1), "deep dawn" (Luke 24:1, literal Greek), and "still dark" (John 20:1), and "Very early" (Mark 16:2) all refer to morning before sunrise! These are times when the sky begins to lighten. Furthermore, the removed stone is associated with this timeframe (Matt. 28:2; Mark 16:4; Luke 24:2; John 20:1). Likewise, the sign of Jonah follows the day-night, day-night, day-night pattern so that the third day must end before sunrise on the Sabbath according to the Temple calendar (cf. Lev. 6:9-10). The divine light was created before the sunlight. Therefore, the Son of God precedes the sunlight.
16. This is the same question as the preceding, and then it is not. A more accurate study can be done by weighting each criterion by the number of times it appears in the texts. But this would require me to rate the "first of the Sabbaths" criterion four times, since it appears four times. However, so as not to bore the reader, I have opted for the shorter approach. The errant views are far enough in the hole already.
17. The "first of the Sabbaths" (Matthew 28:1; Mark 16:2; Luke 24:1; John 20:1, and John 20:19) is mentioned five times in the resurrection accounts.[232] This is the number of grace. Adding Acts 20:7 and 1 Cor. 16:2 brings the number of mentions to seven, which is the number of perfection. The idiom is a pure Semitism for אַחַת הַשַּׁבָּתוֹת. A red light for ignoring it.
18. John 20:1, 19; Matthew 28:1, Mark 16:2, Luke 24:1. Cf Acts 20:7; 1Cor. 16:2.
19. If the festival Sabbath had fallen on the weekly Sabbath there would have been no reason to John's mention (John 19:31 μεγάλη ἡ ἡμέρα ἐκείνου τοῦ σαββάτου). Some have tried to explain it as the conjunction of a festival Sabbath and the weekly Sabbath. This however, does not explain the linguistic evolution of the idiom הַשַּׁבָּת הַגָּדוֹל, nor why both the Church and the Jewish community felt compelled to switch the usage to the Sabbath preceding Passover/Easter. This and Matthew's reference to the day after the crucifixion as "the next day" (Mathew 27:62) rather than just plain "Sabbath" show that a midweek festival Sabbath was meant by John, and Mathew (cf. *Later of Sabbaths*, Mt. 28:1). A red light for all the Friday-Sunday theories.
20. Leviticus 6:9-10 specifies that the offerings shall burn on the altar all night. The offering specified in Lev. 23:11, 12-13 was offered after the daily offering, and burned all the rest of the day and all night. In the case of the Friday views, this offering for a day and a night does not correspond to the third day in the gave; nor does the final ascending of the offering before dawn correspond to Messiah's ascending from the dead. And in the case of the Wednesday-Sabbath views where the resurrection is in the afternoon, there is no correspondence between the offering and the resurrection.
21. The idiom "preparation" (Mat. 27:62; Mark 15:42; Luke 23:54; and John 19:14, 31; 42) in ecclesiastical Greek means "Friday" (so also Syriac). The Church celebrated no Passover that required an annual preparation day, and through misunderstanding the chronology transferred the usage of the word to Friday. However, John assures us in this case that it was the "preparation of the Passover" (John 19:14, הֲכִנַת הַפֶּסַח), which does not mean "Friday of Passover" week, a theory vociferously promoted by C.C. Torrey, who held that Yeshua was crucified on Nisan 15. His anachronistic Aramaic arguments are squarely refuted by Solomon Zeitlin in the same Journal. Furthermore, Mark's explanation "which is before a Sabbath" (προς σάββα τον,15:42) was necessary for the *diaspora* precisely because the normal usage for Friday was προσαββάτον and not παρασκευήν. While the later term could be used for Friday, it was not the norm. Normally, "preparation" was used for the eve of the Passover, and elsewhere, such as in the Apocrypha and LXX it was a completely generic term for "preparation." During Passover week it was a technical term for the *erev Pesach*, a fact derivable from the contemporary evidence. The insistence that it is a technical term for Friday is an anachronism based entirely on later Ecclesiastical Greek. A red light for giving in to tradition, and a green light for sticking with the contemporary philological evidence.
22. The reference in John 20:20 to the 46th year clearly comes out to the Passover of A.D. 30 as explained by Jack Finegan (§590-595). This alone totally demolishes theories built around A.D. 30 and A.D 31.
23. The Scripture does not leave us clueless about how to count three days and three nights. I have already explained Temple usage and the solar day. To this I will add the usage of the Egyptian slave in 1st Samuel 30:12. An Egyptian counts days from sunrise to sunrise. He fell sick during the daytime when the raiders were on the move. If he had fallen sick at night, they would have given him water before moving on in the morning, hoping he would recover. David and his men rose at the crack of dawn and discovered the Egyptian before sunrise (the third night). The scripture drops a typological hint, "his spirit came again to him" (cf. Jonah 2:2, "sheol"). This was at the same time that Yeshua rose from the dead. Therefore, the first day comes first, and the third night comes last in the count. Every theory that places the resurrection during daylight gets a red light for not following these clues.
24. Mark 15:46 says that Joseph of Arimathaea "bought fine linen". This would not have been possible if Yeshua had been crucified on the 15th of Nisan. This earns Edersheim and C.C. Torrey's Nisan 15 Friday to Sunday chronology another red light.
25. Graham Scroggie explains, "Remarkable confirmation of the view that the embalming was not done at the time the body of Jesus was buried, but much later, is found in the exact use of two words. In the passages which record the taking of the body from the Cross and wrapping it in a 'linen cloth,' the word, *sindōn*, is used, which was one piece of linen, and not

232 Mark 16:9 is in the longer ending. The πρώτῃ σαββάτου there is equivalent to *hashabbat rarishonit*. It is likely a later addition by one unfamiliar with the counting idiom.

several pieces (Matt. xxvii. 59; Mark xv. 46 (twice); Luke xxiii. 53; cf. Mark xiv. 51, 52); but in the passages which tell of the embalming, the word *orthonion* is used, which means a linen bandage, and in each occurrence it is in the plural, 'linen cloths' (*othonia*), and is associated with the aromatics (John xix. 40; xx. 5, 6, 7; Luke xxiv. 12). The procedure was as follows: On the Wednesday, Nisan 14th, before 6.0 p.m., Jesus' body was taken from the Cross, wrapped in a linen sheet, and hastily buried. There it lay through Thursday, Nisan 15th, the Passover Sabbath. On Friday, Nisan 16th, Joseph and Nicodemus went to the tomb, removed the *sindōn*, and bandaged the limbs and body in linen cloths, *othonia*, with spices, and a separate piece for the head (John xx. 6, 7). See Scroggie, *Guide to the Gospels,* pg. 576.

26. Every use of the idiom "first of the Sabbaths" in the New Testament follows the Passover. Acts 20:7 follows the Passover (vs. 6), and 1st Cor. 16:2 precedes Pentecost (vs. 8) which implies it follows immediately upon Passover. If the phrase meant "first day of the week," then the associating of the Acts and Corinthians passages with Passover is just an oddly unusual coincidence. However, since it is normal for the phrase to mean "first of the sabbaths," the timing in these passages is exactly right. All theories that have to rely on the un-parsimonious appeal to happenstance gain another red light.
27. The Wednesday to Sabbath afternoon or Saturday night theories try to postpone the visit of the women to dawn on Sunday while associating the resurrection with the wrong time of day. Only the correct explanation avoids this problem.
28. The day of the resurrection was on the day of first fruits, or "wave sheaf." On this day the priest waved a freshly cut sheaf of barley "for your acceptance" (Lev. 23:11). This was done "in the day after the rest-day" meaning the 16th of Aviv. Now Yeshua arose at "deep dawn" (ὄρθρου βαθέως), and would not allow any one to touch him until after sunrise. After his first encounter with Mary Magdalene, but before the second with her and the other women, he presented himself in the heavenly Temple. Upon his return he allowed them to touch him because ritual purity was no longer required. The day of the wave sheaf is reckoned with the sun according to the Temple calendar. This is the 16th of Aviv, from sunrise on Friday to sunrise on the Sabbath. The 14th-16th Friday views get a green light only because Sunday happened to be the 16th in those years. But this is being charitable again, because in the Temple reckoning the day did not begin until sunrise on Sunday, and as we have pointed out, the resurrection was before sunrise, i.e. before the offering even began according to the Friday-Sunday views.
29. All of the views, except AD 34, have depended to some extent on the Karaite explanation of the wave sheaf on Sunday. All the views, except the correct one, allow the timing of the wave sheaf to occur according to the Sadducean Pentecost. The "first of the Sabbaths" resurrection, however, conclusively refutes the Sadducean Pentecost because the Sadducees cannot count the first Sabbath until a week after the first Sunday after Passover. This is the same as saying the first Sunday after the first full moon (a.k.a. the 15th Passover) after the spring equinox as the formula for Easter. The Catholic Church adopted the Sadducean view, only instead of seven Sabbaths, they count seven Sundays after Easter.
30. The year 445/444 B.C. was the first Sabbath year of Daniel 9:24-27, and the year 32/33 A.D. was the 69th sabbath year. Only the correct view works with the fulfillment of Daniel 9.
31. The "first of the Sabbaths" shows that Acts 20:7 and 1st Cor. 16:2 refer to the Sabbath. One this is done, all reference to any type of Sunday meeting or worship is rooted out of the New Testament. Of course non Sabbatarians will think this question unfair, but those who keep the fourth commandment will understand the need for pure religion undefiled by baalism. The view that removes this stain gets a green light.
32. The Syriac *Didascalia* says, "On day-of-the-week 3 Jesus ate the Passover; at night he was arrested. On day 4 he was guarded in Caiaphas' house, and on the same day the chief of the people took counsel concerning him …."[233] The Didascalia tries to stretch out the arrest and trial to Friday, but it gives early evidence that the day of the last supper and arrest were correctly remembered. This is because all the major events happened on day 3-4 and few on 5 or 6. The Friday views get a red light for letting this little parcel of evidence escape their book burning program.
33. The man with the water jar shows some involvement of the Essenes in the timing of the last supper. The Essene Passover Seder was on Tuesday evening, right after the spring equinox. There are some good points in A. Jaubert's novel theory. A green light for agreeing.
34. Walther also notes that there are references in Epiphanius, Victorinus of Pettau, and in the *Book of Adam and Eve* that support Tuesday evening for the last supper. Another red light to the Friday theories for failing to suppress this evidence.
35. Does it confirm biblical chronology? Once you have the correct view of the death and resurrection of Messiah, one thing leads to another. Daniel 9:24-27 can be restored, and so also the rest of biblical chronology, which stands on its own two feet. The Passion only shows us where to look for the answer, but the answer is independent, and therefore confirms the Passion.
36. Of course this is a detail of the preceding question. But I think it needs emphasis.
37. The first line in the sand to defend the Friday views is the "preparation" equals Friday mantra. The Friday to Sunday traditionalists must maintain the absoluteness of this argument or their chronology begins to crumble. Since their view depends almost entirely on bluff and pseudo scholarship, they cannot yield and inch or they loose face. Each Friday view looses a point for staking their existence on the dogmatism of a few questionable points.
38. This is another question pertaining to the dogmatism of the Friday to Sunday morning theorists. However, the day of atonement is called "a Sabbath of Sabbaths," and the word Sabbath is applied to the Sabbatical year. Really Sabbath means "rest day" and this is what it means in Lev. 23:11. Likewise, even the Babylonians maintained that the 15th of the months were called "Sabbath". The Jews mostly switched from calling feast days "Sabbaths" to calling them "Yom Tov" out of a sense of fear of Christendom or a Rabbinic wish to cover up the evidence. Each Friday view gets a red light for making the flimsy argument that "sabbaton" cannot refer to a feast day.
39. Does the view agree with the earliest dawn indication in Hosea 6:3?

---

233 From E. Vogt and Jaubert cited in "The Chronology of Passion Week" by James A. Walther, *Journal of Biblical Literature*, vol. 77, No. 2 (Jun., 1958), pp. 116-122.

40. It is difficult for some views to have Yeshua anointed six days before the Passover on Nisan 10, the day the lamb was set aside in Exodus 12, and to avoid a chronology that requires travel on the Sabbath. In the Friday views (14 Nisan), Nisan 10 would fall on Monday, which is after Palm Sunday, and thus after the anointing mentioned in John 12:3, but before the second anointing in Mat. 26:7. So no anointing falls on Nisan 10.
41. Except for AD 34, all views fail to explain the seven sevens and also fail to allow for Ezra to be the first anointed and Messiah the second anointed.
42. Only in the AD 34 view do "after three days" and "on the third day" refer to the same time.
43. Sabbath afternoon theories do not meet the biblical types that the resurrection should be *within* three days.
44. "Ancient Martyrologies give March 25 and March 27 as the dates of the Crucifixion and Resurrection" (pg. 385, "The Resurrection in Primitive Tradition", Bacon, *The American Journal of Theology*, vol. 15, No. 3. (Jul. 1911), pp. 373-403. The March 25th date is the same as the great Sabbath in A.D. 34 (i.e. Thursday, John 19:31), and March 27th A.D. 34 is the Sabbath day. No other theory can come even close to matching these dates. (not entered in table).

Day and Week in the Resurrection Passages

I have written the *Resurrection Day of Messiah*, to address more deeply linguistic arguments objecting to first of the Sabbaths, so I have removed a good deal of that material from this edition to make room for the new material. What was in this edition is now in the other book. However, I will give a brief summary based on objections:

Objection #1: Sabbath means *week*. The only place that this might have to be conceded is in Luke 18:12, however that it may have such a meaning does not prove that it does have such a meaning in the resurrection context. The sense *week* appears to have been introduced no earlier than AD 140 in *Seder Olam*. The biblical chronological context forbids the meaning week in the resurrection passages.

Ojbection #2: The feminine gender of *first* disagrees with the neuter gender of *Sabbaths*, and therefore first of the Sabbaths is impossible. This objection fails when we correctly interpolate the word day into the clause: first [*day*] of the Sabbaths. And then compare it with "first [day] of unleavens" which is grammatically congruent to first of the Sabbaths. The first day of unleavens is the first day in a seven day series. The first of the Sabbaths is the first day in a seven day series. Knowing that this series of seven days is in fact seven sabbath days (Lev. 23:15) is the interpretive key. The grammar has nothing to say against it. Or, it can be viewed this way: the phrase requires *day*, and so it should be first *day* of the Sabbaths. However day of the Sabbaths without the word first always means the Sabbath day. Or, it can be viewed as a Hebrew idiom: ahat ha-Shabbatot. The feminine gender of the Greek is immediately explained by the Hebrew original.

TABLE 179. *The Dates of Nisan 14 and 15 in A.D. 27–34*

	(1) As calculated by Fotheringham		(2) Or, supposing the intercalation of a month in the preceding year, as shown by Parker and Dubberstein, so that Nisan came one month late, then	
A.D.	*Nisan 14 fell on*	*Nisan 15 fell on*	*Nisan 14 fell on*	*Nisan 15 fell on*
27	Apr 10 Thu	Apr 11 Fri		
28	Mar 30 Tue	Mar 31 Wed	Apr 28 Wed	Apr 29 Thu
29	Apr 18 Mon	Apr 19 Tue		
30	Apr 7 Fri	Apr 8 Sat		
31	Mar 27 Tue	Mar 28 Wed	Apr 25 Wed	Apr 26 Thu
32	Apr 14 Mon	Apr 15 Tue		
33	Apr 3 Fri	Apr 4 Sat	May 2 Sat	May 3 Sun
34	Mar 24 Wed	Mar 25 Thu	Apr 22 Thu	Apr 23 Fri

The above table is from Finegan's *Handbook of Biblical Chronology*, Revised Edition. Column 1 shows the AD date for years various scholars have thought possible for the crucifixion. The second column shows the date of the first Passover sacrifice, corresponding to the Passover in Egypt. The third column shows the date of the second Passover offering, corresponding to the memorial of the Exodus.

The last two columns show dates derived from postponement of the first month. They are actually dates of the second Passover, II.14 and II.15 for Israelites who were unable to keep the regular Passover. The postponed dates are not legal dates for the regular Passover because the preceding month meets all the criteria, and does not involve an illegal postponement of the first fruits offering. This narrows the field down to the first three columns.

This leaves the only remaining Wednesday date in AD 34 in column two at the bottom. AD 34 was supported by Joseph Scaliger, Sir Isaac Newton, and Solomon Zeitlin, however, the first two scholars doubtless postponed Passover one month. Even with the month postponement, they could not well support a Friday date except on Nisan 15. It is likely that Newton supposed a Friday date on Nisan 14, Apr 23. However, improvements in retro-calculation have shown it unlikely. Scripturally it is impossible because of the postponement.

AD 29 was popular with the Church Fathers before retro-calculations proved that a Friday day was impossible for this year. Wednesday and Thursday dates are also impossible for this year, even if the month is postponed. There are many other contradictions between this year and Scripture.

AD 30 is the year settled by most Catholic scholars seeking a Friday date. Wednesday and Thursday dates are impossible in this year, even if the month is postponed. The year itself is rendered impossible by the 15th year of Tiberius, reckoned only one way by Rome, and vouchsafed by the Scripture.

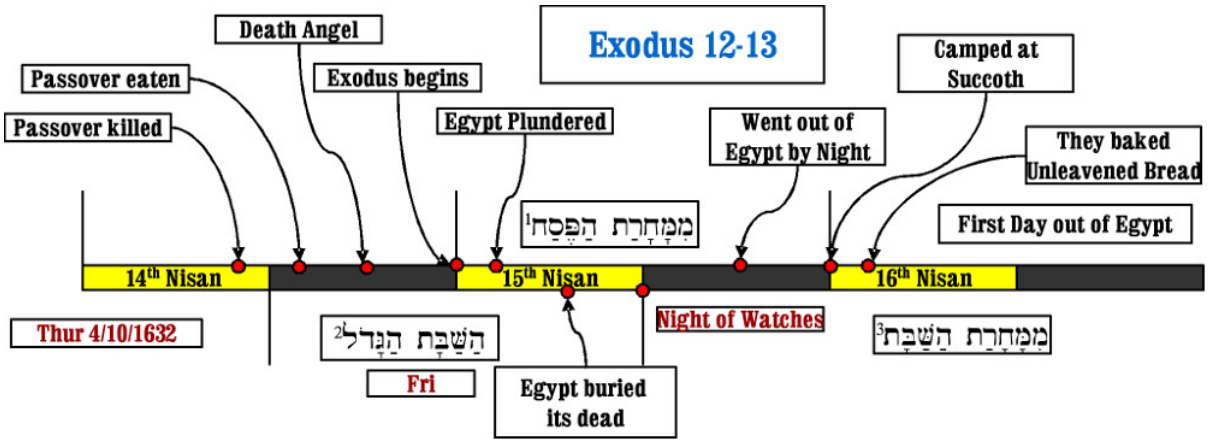
AD 31 is supported by Seventh Day Adventists, First Day Adventists and Millerites. Friday dates are not to be found in this year in either the regular Passover month, or in a postponed month. The 15th year of Tiberius also nixes this date.

AD 32 was selected by Sir Robert Anderson as the year for his Daniel 9 calculation (using a 360 day year). However, the year was abandoned when it was constantly pointed out that that Passover did not fall on Friday in this year according to accurate calculations. Anderson's theory was transferred to AD 33 when it was shown that the Friday date failed.

AD 33 is the current theory of Evangelical Protestant scholars because it supports a Friday date. Most of them have grafted Anderson's theory onto AD 33.

Other than AD 34, every other theory involves severe chronological problems, and repeatedly contradicts Scripture. The Wednesday date in AD 34 is the only date that upholds the perfect accuracy of Scripture. The flaws in the other dates have sent many a scholar down the slippery slope of doubt, and then to liberalism and unbelief.

FIGURE 58 EXODUS WEEK DETAIL, AVIV 14-16



They selected a lamb on the 10th day (Ex. 12:3) and kept it "until the 14th day" (Ex. 12:6). "Day" meant the dawn to dusk of the 14th (cf. Gen. 1:5), and the Hebrew "until" does not set a terminus, but means "at least as far as." Also the "day" in Egyptian reckoning began in the morning, as well as in the older Hebrew reckoning (Bacchiocchi, "The Reckoning of The Day in Bible Times", pg. 66-87; Finegan §12).

They killed the Passover "between the settings," which is between noon and sunset (proved in Numbers 28:1-4). They ate it "that night" still being on a sunrise reckoning of the day (Ex. 12:8). The "memorial day" is the 15th according to a sunset reckoning as this was made into a Sabbath (Ex. 12:14, 16). This became the "First day," or "First Sabbath" of the feast. It came to be called "the Sabbath" in Lev. 23:11, 15 (Mark 16:1), or the "Great Sabbath" in N.T. times (John 19:31). This day was the "first day of unleavened bread" and "unleavened bread is to be eaten "seven days" (Ex. 12:15) from the 15th to the 21st of Nisan (inclusive counting by sunset reckoning).

They removed the leaven *on the head day* of Passover, which is Nisan 14, and they ate unleavened bread from sunset on the 14th to sunset on the 21st for seven days (Ex. 12:15, 18). The phrase *ba-yom ha-rishon* has two meanings: 1. on the head day, and 2. on the first day. The first of these meanings is used in Matthew 26:17; Mark 14:12; Luke 22:7.

On the day part of the Great Sabbath the Exodus began (Ex. 12:17). Exodus 12:18 means from sunset ending the 14th to sunset ending the 21st day. No Israelite was to go out of his house "until the morning" (Ex. 12:22). At midnight the firstborn of Egypt died (Ex. 12:29). Pharaoh called "to Moses and to Aaron" (not 'for' them) (Ex. 12:31). They plundered Egypt of its silver and gold on the day part of the 15th (Ex. 12:35) while the Egyptians buried their dead (Num. 33:4). They left Egypt journeyed to Succoth in the night after the day part of the 15th (Ex. 12:37; Deut. 16:1). This was "in the day after the Passover" (Num. 33:3). They baked their unleavened dough at Succoth (Exodus 12:39) on the morning of the 16th of Nisan, and this was "in the day after the *Great* Sabbath" (Lev. 23:11). Therefore, Israel is not allowed to eat the "new grain" until this day, and this is also the first day of fifty days unto the giving of the Torah on Mt. Sinai.

Certain of the precepts in Exodus 12 were only prescribed for that first observance of the Passover, and these are those precepts concerning taking a lamb on the 10th day, putting the blood on the door posts, eating it in haste with shoes on the feet and the staff in the hand. The lamb for the Passover memorial could be taken after the 10th day, and it could be eaten reclining. No blood was put on the door posts.

Also, the memorial Passover could only be offered at the tabernacle (or Temple) holy place. It was not allowed to offer sacrifice at any place except the place for the tribes designated by Yahweh. After the sanctuary at Shiloh was destroyed by the Philistines, it appears that sacrifice at a high place was designated if it was sanctioned by a true prophet. Such appears to be the case in the days of Samuel, Saul, and David, until the Temple was built. Also the northern kingdom was cut off from the altar at Jerusalem in the days of Elijah, yet the prophet was approved by Yahweh to choose Mt. Carmel as the place of an ascending offering. So it appears that a place could be chosen under the direction of a prophet. But it had to be a true prophet, and the prophet had to be present before the sacrifice could be eaten (1Sam. 9:13).

The high places of the priests of Ba'al, however, were equated with false religion. The priests were under the ban, and their images were to be destroyed. These were supported by false prophets. Their sacrifices were regarded as unholy offerings to false gods.

Apart from the authority of a true prophet, no place except the last place permanently chosen by a true prophet could be used for sacrifice. That place is in Jerusalem. Therefore, when Israel was exiled, they went without sacrifice. So also Judah went without sacrifice until they returned to the land, and a new temple was built. So also at the present time no sacrifice is offered during the Passover memorial supper. Everything in it is considered symbolic including the unleavened bread and fruit of the vine, which are only symbolic of Messiah's death and resurrection.

Appendix I: Terah-Abraham

"Then Noah was a son of 500 years. Then Noah begat Shem, Ham, and Japheth" (Gen. 5:32). If this was a simple case of triplets, then we would expect Terah's sons to be triplets too, since Gen. 11:26 uses the same pattern, "Then Terah lived 70 years; then he begat Abram, Nahor, and Haran." However, we can ascertain that the order of birth was actually, 'Japheth, Shem, Ham,' and in Terah's case 'Haran, Abram, Nahor' or less likely, "Haran, Nahor, Abram." We are told that Japheth was "the elder" and that Ham was the "younger son" or "youngest." On the same pattern we expect Haran to be the oldest, and Nahor to be the youngest. Clearly Haran is the eldest since both Abram and Nahor married after Haran died, and Nahor married a daughter of Haran, and Abram a daughter of a second wife of Terah. Haran would have been born when Terah was 70, or this would have been the age at which Terah married. If Haran married around age 50, and bore daughters, then Terah would have been 120 at the time. Terah would have born Abram at 130, and Nahor shortly after. This would make Haran's daughter and Nahor a close match, as well as allow Abram to marry Sarai, the offspring of a second wife of Terah.

Now Shem was 100 years old two years after the deluge (Gen. 11:10), so it is not possible that he was born in Noah's 500th year without contradicting this text, or resorting to non-standardized chronology. Noah was 600 when the flood occurred. It completely disproves the triplets theory, because any explanation of Gen. 11:10 would have to arbitrarily depart from the rule. Always, in the case where one son is listed, the age of the Father is his age at the birth of his son. And if this rule is discarded, then the chronology becomes unsolvable, a principle that should not be admitted. Further, in all cases of one son, the age of birth is backstopped by the remaining years lived by the father.

Since the order of names is not the order of birth, it follows that the order conveys no information about relative age between the sons, whether it be minutes or years. It would be implied that the first listed is the oldest by any normal reading. But this is disproved elsewhere. It might be implied that the first son listed was born at the age stated of the father, and perhaps the others later, but knowing that the first listed is not the oldest refutes even this assumption of normal reading. The text is strongly hinting that another meaning be put on the stated age of the father.

In both the cases of Noah and Terah, the text signals a pattern that does not agree with any normal assumptions. The only reasonable assumption left is that the father's age ties with the firstborn or his age at marriage. And in one case the firstborn is surely Japheth, and the chronology does not continue with him. In the second case it is surely Haran, but the chronology does not continue with him either.

Also in both cases, the chronological deficiency is made up by linking the continuing son to the father in another way. Shem is linked to Noah via Noah's age at the flood, and Shem's age two years after the flood. Abraham is lined to Terah via the latter's death, and Abraham's age after his father died.

This explains the chronology, but only leaves unexplained why the sons were listed out of order. We see that the first son listed is the son with which the patriarchal line continued. Furthermore, the first son appears to have taken the place of the firstborn after older sons migrated or died, or had another promoted over them. Japheth is given second place under Shem in Noah's blessing, and Canaan's curse. Haran died, and therefore the firstborn rights were transferred to Abram. Also, Shem and Abraham are the primary subjects of the narrative.

This may justify listing them first, but not completely. I believe in the final analysis that only the assumption that the text presents us with an anti-cipher is good. A cipher is meant to prevent someone without the key from finding an answer. An anti-cipher is meant to mislead the simple to the wrong answer, and hence prevent them from finding the answer. To be sure the fact that Noah's age 500 and Terah's age 70 should not be depended on to continue the chronology is loudly proclaimed by the surrounding facts.

The presence of ciphers and anti-cipher's in the text actually acts to preserve the text. For if the answer were known to everyone, then another way to attack or corrupt the text would be found out by people unwilling to believe the real message. Since the faithful may figure out the ciphers and avoid the anti-cipher's, since the Almighty will help them here, and the unfaithful will not figure them out, since he will not, then it is predictable where the erring with err. And therefore, the faithful can be prepared for the erring line of reasoning. Of course some of the faithful may be caught erring too due to the ciphers, so to this we can only say not that the Most High will give no answer, but that he is not yet ready to give the answer to these. All the faithful have been caught in this position. Therefore, we can only say that the answer we give is the best we know at the time, and hope that others can see why it is the best.

Seeing why it is the best has everything to do with acceptance of key spiritual truths in the first place, which I will not state here again, but those who know will realize what they are. I will only state the confirming witnesses that the best solution to these ciphers has been given, or that it is the best we can give. Firstly, solving the problem as described above agrees with the Sabbatical year and Jubilee cycle of Israel, and secondly, the astronomy lines up for the flood and creation.

The ages of Adam to Lamech, at the birth of their sons, are backstopped by the number of years they lived after the birth of their sons. This is omitted in the case of Noah. The ages of Shem to Nahor, at the birth of their sons, are also backstopped by the number of years they lived after the birth of their sons. This is omitted in the case of Terah.

Now because Noah's age at the birth of his sons is not backstopped by the years remaining in his life, we cannot be certain that Shem's year 0 aligns with Noah's year 500. We can only be certain that Noah was at least 500 years old. The reason for the statement of the remaining years is surely to confirm the birth year, and the meaning of the stated age. It's omission on the other hand, is surely intentional, and suggests we put another meaning on the stated age. The only other meaning to put on the stated age is that Noah got married at age 500 years. The subsequent statement gives the offspring of the marriage, and the order listed is not the order of birth. This is an unusual interpretation, to be sure, however, everything else about the case is unusual, the order of births, and the omission of the number of years backstopping the birth year of the patriarchal line. The reason for an unusual statement that can appear like the normal statements is to create a cipher. The reason for the cipher is to obscure the answer, like the parable in Luke 13:6-9. The reason for parables and ciphers is to keep those who should not see from seeing. That way the Holy Spirit can choose whom he would like to see, and keep the answer from those he would not like to see.

For those who will not see, the obvious reaction to parables is that the Almighty is not fair. It is not fair for him to speak in parables. This is the fleshly charge that keeps them from accepting the solution. They cannot believe that He would have required solution to parables and ciphers to find the answer. This is not just the case for Scripture chronology. It is the case for Messianic prophecy also. The prophecies of Messiah are also most often in parable form, or require some deciphering. The Most High is not being unfair, because he requires the seeker to do some seeking, and some praying. Also he has put all the keys to breaking the ciphers and interpreting the parables in the Scripture. Some ciphers he may not let us solve until he determines that the time for their solution has arrived. The puzzle that is solved that has existed for a long time before the eyes of Israel is much more powerful than freshly minted prophecy.

Therefore, the decipherment of Gen. 5:32 is "Noah was five hundred years old [when he married]. Then Noah brought forth Shem, Ham, and Japheth." Similarly, "Terah lived seventy years [until he married]; then he brought forth Abram, Nahor, and Haran" (Gen. 11:26). By the time of Terah, inbreeding was beginning to result in barrenness. This well explains the gap between Haran and his brothers Abram and Nahor, and why Terah had a second wife, who gave birth to Sarah.

Another key to the Terah cipher is the location of his death notice. We expect the death notice and age at death not to imply that what comes after it is strictly subsequent to the death when the notice is in one of the terse summaries including all the chronological biography in one place. For example, Gen 5:1 records that Adam died at 930, but then the text goes on to describe births that happened before Adam died. Likewise, if the notice is at the end of one of the 'these are the generations of....' accounts, we expect that the next account can begin before the end of the last account. This is the case with the record of Noah's death in Gen. 9:29, which is immediately followed by, 'And these were the generations of the sons of Noah, Shem, Ham, and Japheth' (Gen. 10:1). This sums up the account written jointly by Shem, Ham, and Japheth.

The next account written by Shem (cf. Gen. 11:10) starts before the death of Noah. Terah left a very short, but important account. Abraham did not leave an account, but the history was written by his son Isaac (cf. Gen. 25:19). Please note that the phrase 'these are the generations of....' ends each account, the only exceptions being where someone else's account was inserted by the writer, as in the case of Ishmael (Gen. 25:12), in which the statement is put first to let the reader know that the primary writer did not actually compose it. This is also the case with Esau (Gen. 36:2). Jacob's account ends at Gen. 37:2. The statement of Terah's death is in Isaac's account. It does not occur with a general biographical summary. Nor does it occur at the end of any account.

We can only suppose that Isaac put the statement where he did in Gen. 11:32, in the middle of narrative, because that is when and where Terah died in the narrative. The death notice is placed in the correct chronological position. Isaac places Sarah's death in the correct chronological position (Gen. 23:1), and also Abraham's death (Gen. 25:7-8). We may therefore expect everything in Genesis 12 to happen after Terah's death, and this agrees with Acts 7:4, and agrees with the position of the death notice. There is no reason to think that the statement is an isolated biographical summary, since it is detached from such a context. Terah's death notice simply flows into the narrative.

Appendix II: Fine-Tuning the Judges

Israel received manna in the second month after the Exodus (Ex. 16:1), and the manna ceased in the first month (Josh. 4:19) upon entry into the land of Canaan immediately after the Passover (Josh. 5:11-12). The Scripture says that they had manna for 40 years (Ex. 16:35). Therefore, there can be no overlapping of this period.

According to Judges 11:26, Israel occupied the town of Heshbon for 300 years before it was taken over by the Ammonites. Heshbon was captured by Israel in the second half of the 40th year after the Exodus. Therefore, the overlap between these 300 years and the preceding 40 is only six months.

The conquest is timed by Caleb's age. He was 40 when the ten spies rebelled, and 85 when the land was divided. From the rebellion onward, Israel wandered 38 years in the wilderness. Thus puts the period of conquest at seven years.

At this point we come to the first unknown, as a figure is not given for the elders period. In the main chronology, it was assumed that the 300 years in Judges 11:26 ended at the first year of Jair, and that this was a round number for a slightly larger figure 322 years. There are two other solutions, which we will come to after laying out the other figures.

In Judges 3:7, it says Israel rebelled, and forgot Yahweh, and served the Baals and Astheroth, and so he sold them to Chushanrishathaim for eight years. There is no chance of an overlap. For the Scripture had said, "And all that generation also were gathered to their fathers; and there arose another generation after them who had not acknowledged Yahweh, nor yet the work which He had done for Israel" (Jud. 2:10). This is not to say that everyone in Israel was unfaithful. It is to say that enough of a majority rebelled so that the nation could be described as rebellious against the Messenger of Yahweh.

But Israel cried to Yahweh, and He gave them Othniel to deliver them. When he delivered them, it was written, "Then the land was quiet for forty years" (Jud. 3:11). The Hebrew word 'quiet' is from the verb /shaqat/ (וַתִּשְׁקֹט). The word also means, 'undisturbed,' 'at peace' or 'at rest.' Can the eight years of oppression before the forty years be described as 'at peace'? Hardly. So there is no overlapping between the years of oppression and the years of peace.

Then Othniel died (Jud. 3:11b). "And the sons of Israel again did evil in the eyes of Yahweh...so Yahweh made Eglon, king of Moab, to be strong over Israel. Now this is certainly a disturbance to the peace, and it lasted 18 years (Jud. 3:14). Then Israel cried out again, and he gave them Ehud. When he had delivered Israel, it says, "Then the land was undisturbed for eighty years" (Jud. 3:30). Again, being oppressed by an enemy and having peace in the land do not mix. There can be no overlapping. It is recorded that Shamgar also delivered Israel, and no sum of years is assigned to Shamgar. It may be safely supposed that the Philistines threatened Israel from without, and that Shamgar went and eliminated the threat before they could oppress the land and disturb its peace during the eighty years. Possibly Ehud himself was too old to deal with it. So instead Shamgar saved Israel from the impending threat, and the land was not disturbed. Shamgar may have saved part of Israel during the next servitude, but there is no separate figure for this.

After this Israel again did evil, after Ehud died (Jud. 4:1). So he gave them into the hand of Jabin of Hazor. He oppressed Israel 20 years with great force. He had 900 iron chariots (Jud. 4:3). Again the land was disturbed. Again the land did not have peace or rest. And again, there can be no overlapping with the previous 80 years of peace.

There is an overlap here. Deborah was judging Israel at this time (Judges 4:4), during the 20 years. The sons of Israel cried out to Yahweh, and therefore Deborah sent for Barak to deliver Israel. When Israel was delivered, the Scripture says, "Then the land was at peace forty years" (Jud. 5:31). There is no chance of the 40 years overlapping the previous 20. All the figures so far are back to back, each time period joined to the previous, end to end. We see here that the Scripture only states 40 years, even though Deborah was judge during part of the previous oppression.

The sons of Israel did evil again. This time Midian oppressed them for seven years. When Gideon had delivered them, then it says, "And the land was undisturbed forty years in the days of Gideon" (Judges 8:28). Again there is no overlapping with the previous seven years, because Midian disturbed the peace of Israel's land.

Now Judges 8:28 says 'in the days of Gideon' so it is rightly concluded that the forty years of peace ended when Gideon died (Judges 8:32). "Then it was when Gideon had died, that the sons of Israel turned and played the harlot after the Baals, and they set up for themselves a Baal covenant for god" (Jud. 8:33).

Yahweh let Abimelech rule Israel for three years, and then it says that he was killed (Judges 9:55). "Then after Abimelech, Tola rose up to save Israel" (Judges 10:1). Please note that it says, "after" (אַחֲרֵי). He judged Israel 23 years. "Then he died, and was entombed in Shamir" (Judges 10:2). "Then after him, Jair the Gileadite arose, and he judged Israel twenty-two years" (Judges 10:3). Again, the text says 'after' the previous judge.

Now of course, some sly interpreter is going to say that Jair began to judge right 'after' Tola began to judge. But we have seen a case already of Shamgar being a judge during the tenure of Ehud and the servitude of Jabin. No years were assigned to Shamgar. Why were the years of Shamgar's deliverance omitted? They were left out because they do not add to the continuation of the chronology. The reason that Jair's years are counted is that they add to the continuation of the chronology.

Little is accomplished by trying to twist the word 'after' to mean 'contemporary with.' What is accomplished is to make the chronology arbitrary. For it begs the question, then, of just how much the speculated overlapping would be. The Scripture tells us that Jephthah judged for six years, which began when he defeated the Ammonites after their eighteen year rule. He was followed by several more short ruling judges, Ibzan, Elon, and Abdon. In each case they ruled 'after' their predecessor.

Then Israel did evil again, and so Yahweh sold them into the hand of the Philistines for forty years (Judges 13:1). During this forty years Samson began to deliver Israel for twenty years. The Scripture says that Samson's years were 'in the days of the Philistines' (Judges 15:20). So we see that when there really is an overlap that the Scripture tells us so.

Following the Philistine oppression, Eli judged for forty years. Then the Philistines oppressed Israel again for twenty years. At the end of the twenty years Israel again cried out for deliverance. Samuel prayed for them, and they were delivered from the Philistines (1Sam. 7:2-13). In 1Sam. 7:13, the text says, 'And the hand of Yahweh was against the Philistines all the days of Samuel.' This phrase 'all the days of Samuel' refer to his official judgeship, which began in 1Sam. 7:6. This excluded the previous

twenty years of Philistine oppression. However, the Scripture says that 'Samuel judged Israel all the days of his life' (1Sam. 7:15). What is made plain by this is that Samuel judged for a time that overlapped the Philistine servitude, but that his official judgeship excluded it, which began in 1Sam. 7:6. This makes it plain that the twenty years were a servitude, since during it the the hand of Yahweh was not against them.

Now many have stumbled over 1Sam. 7:2, and have assumed that the ark was only in Kiriath-jearim for twenty years. The figure, however, is only telling us how long the ark had been their up to that point, up to the point when Israel again began to lament after Yahweh. The ark was there much longer, and failure to see this results in contradictions concerning the lives of Samuel, Saul, and David.

Now there are two unknowns during the period of the Judges, the elders period and Samuel's judgeship. The sum of these two unknowns is 33 years, determined by completing the 480 years, and by synchronizing the Jubilees. The 33 year figure is founded on those two witnesses. The oppressions are fixed at 134 years, a figure that exactly complements the later sin of the northern kingdom for 256 years. The two figures add to 390.

We have already seen that the period of the Judges adds up to much more than 480 years when extended to the fourth year of Solomon. And the cipher has been explained that the 480 years counts the number of times that Israel kept the Exodus celebration as a nation. This was not officially recognized during the oppressions. Adding up the years when they were walking with Yahweh leaves 446 + x + y, where x and y represent the Elders period and Samuel's years. 480 Passovers represents 479 years, as in 1Kings 6:1, Passover had just happened. So 446 + x + y = 479. And x + y = 33.

The values of x and y have to satisfy the criteria that 70 sabbatical years were not observed. These sabbatical years include the seventh year and the jubilee years that Israel failed to keep during the time that Israel and Judah sinned. These figures are 390 and 40 years.

If x and y are chosen poorly then the required sum of 70 years will not be found. I therefore checked all theoretical counts of the Sabbatical years to determine which values of x and y are valid.

This was done by trying all values for the Elders period from 0 to 33, and all corresponding values of Samuel's judgeship from 33 to 0 years. The solutions that allow 70 sabbatical years to be counted are as follows. I computed the results by plotting every combination in a spreadsheet.

Elders 19	Samuel 14
Elders 14	Samuel 19
Elders 13	Samuel 20
Elders 7	Samuel 26
Elders 6	Samuel 27
Elders 5	Samuel 28
Elders 4	Samuel 29

I judge that only the first three solutions are reasonable. In the main chronology, I adopted the second solution, where the Elders are 14 years, and Samuel is 19. The last four solutions are too short for the Elders, and do not allow a reasonable time for that generation to pass away before the first rebellion. The first solution is probably as reasonable as the second.

This then is the explanation as to why Acts 13:19 says "about 450 years." The time is, in fact, not exactly known for the sub-chronology, and we can only get the overall chronology by solving the cipher of the 480th 'for the going out of Egypt', the 390 years of Israel's sin, and the 40 years of Judah's, the 70 contained Sabbatical years, and the confirmation of Jubilee synchronization before and after the floating period.

The period in question between the Elders and Samuel contain no known weekday synchronisms to the calendar, and no astronomical events that can tell us which of the three solutions is the right one. They key may be hidden in the text somewhere, or buried in the ground. Only heaven knows. Someday someone may be privileged to find it.

The Scroll of Biblical Chronology
Introductory Preview

This preview includes seven pages of the charts covering 524 years out of 101 pages covering 6223 years, some of which are still future, and show prophetic models. It is then followed by two sample pages from the commentary, which is 100+ pages (8.5x11). In total the book is 200+ pages. Half is charts, and half is commentary with additional charts and tables included. Please make sure you have followed the procedures to set your PDF Reader (Foxit Reader is best) for continuous scrolling, and to remove the gap between pages.

The first chart page may spread wider in the PDF reader than the text pages before it. This is normal. All the charts butt end to end forming a continuous scroll.

The first column of the charts shown here is the BC year. 1583 BC is at the top of the first chart, and 1049 BC at the bottom of the last chart.

The second column is shaded green. It counts years of the world starting from creation. In the preview 2557 is fully visible, and 2556 is cut in half. The other half is on the previous page, not shown in this preview. With Foxit Reader set right, the top half of 2556 joins perfectly. If you scroll down and look at the page breaks, you will see that the pages will join even if you have not put the settings to remove the gaps in the Reader. I know many previewing will have neglected it. It IS worth setting your Reader correctly.

The third column is narrower than the first two. It counts seven year periods, with the seventh year shaded red. This cycle is mentioned extensively in Zuckermann's treatise on the Sabbatical year, where he discusses three cycles and says that two are possible. This is one of those two. It is shown in the book why it is the correct one. The cycle repeats continuously 1-7, and the 7th year was supposed to be a year of rest for the land.

The fourth column is really skinny. In Foxit Reader you can hold down the control key and zoom the mouse wheel. It is shaded orange, blue, green, and yellow for the four seasons of the year, autumn, winter, spring, and summer. More technically, the spring begins with the spring equinox or the first day of the first month. The autumn begins with the first day of the seventh month. The commentary will point out a difference if it makes a difference. Each season is reckoned to take three months.

Column five counts the Jubilee cycle. In the charts shown here, year 9 is shown, shaded gray, with the number in white, across from the year 1583 BC. A nifty feature, which I describe on my web page is the ability to set the guides and rulers in Foxit Reader. The guides can then be dragged down and aligned across the rows to see what aligns with what. Of course you can use a physical ruler on your screen also.

In the Jubilee cycle, every year divisible by seven is sabbatic, and therefore it is shaded red. Scroll down to year 50, and it is shaded gold, to indicate it is a Jubilee. The Jubilee year also counts as the first year of the next Jubilee cycle as taught by Rabbi Judah, and also proved to be scriptural in the commentary. Also, the year 1 is shaded gold in column three when it is the Jubilee year.

All the columns described so far run the whole length of the chronology, starting with creation, and ending in the future with prophetical guesses.

Next to the Jubilee cycle column, in column six, and next to 1572 BC, a new column begins. The years in it are shaded brown, brown for earth that is supposed to be fallow. This year is labeled 'Neglected Sabbatical,' and it is counted 1. It lines up with the seventh year of the Sabbatical cycle and the 21st year of the Jubilee cycle. This column counts the number of times that Israel failed to let the land rest. In the preview charts, you can follow this counting down to 22 years, which is aligned to 1124 BC.

Now back on the first page of the preview, between 1572 BC and 1564 BC in the first column, you will see that these BC years are offset from the year of the world in the second column, but one season. This is because BC years begin in January, and the year of the world begins in the spring. Observe also that columns three and five begin the year in the autumn.

Looking across from 1572 to the pink column inscribed 'Chushan-Risha-thaim' you will see there a sequence of eight years. When Israel sinned, and rebelled against the Almighty, they were given over to be oppressed by this king. At the end of the eight years, Israel repented and returned to the Most High.

During the eight years Israel did not obey the commandment for the fallow year. So notice that two of the neglected fallow years are counted during this eight years. These are shaded brown, and numbered in white.

Also, just to the left of the pink column for Chushan is an orange column that also numbers eight years. This column keeps a running sum of the number of years that Israel sinned against God. If you scroll down a little, you will see that the sum picks up again with each time Israel was oppressed by a foreign power because of their disobedience. In the preview charts, this sum comes to 134 years at 1122 BC. You can also see inscribed in this column the reason for it. Also, the neglected fallow years are always counted during these years of sin, and that of Judah alone, after Israel was exiled.

Over on the far right of the charts, you will see the chronology of Egypt, Babylon, and Assyria. You will see a line connecting the oppression of Chushan to Burnaburiash, king of Mesopotamia. Observe that Burnaburiash is contemporary to Ahmose I of Egypt and Shamshi Adad III of Assyria. There is also a red linking line to Puzur-Ashur III of Assyria, between him and Burnaburiash.

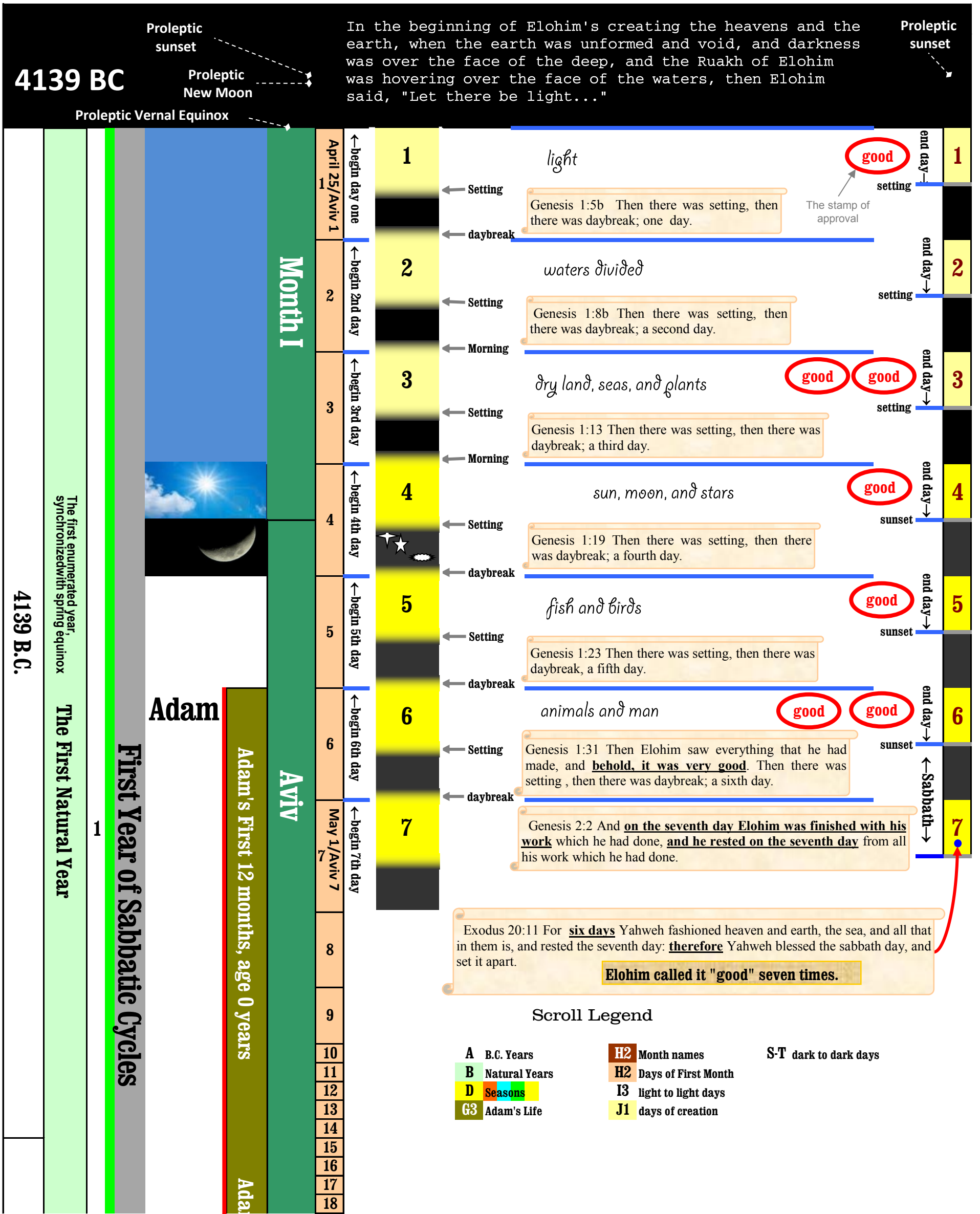
Looking down the Egyptian chronology, observe the red boxes labeled 'lunar dates.' These are matched to the repeating 25 year lunar and sothic cycle of Egypt.

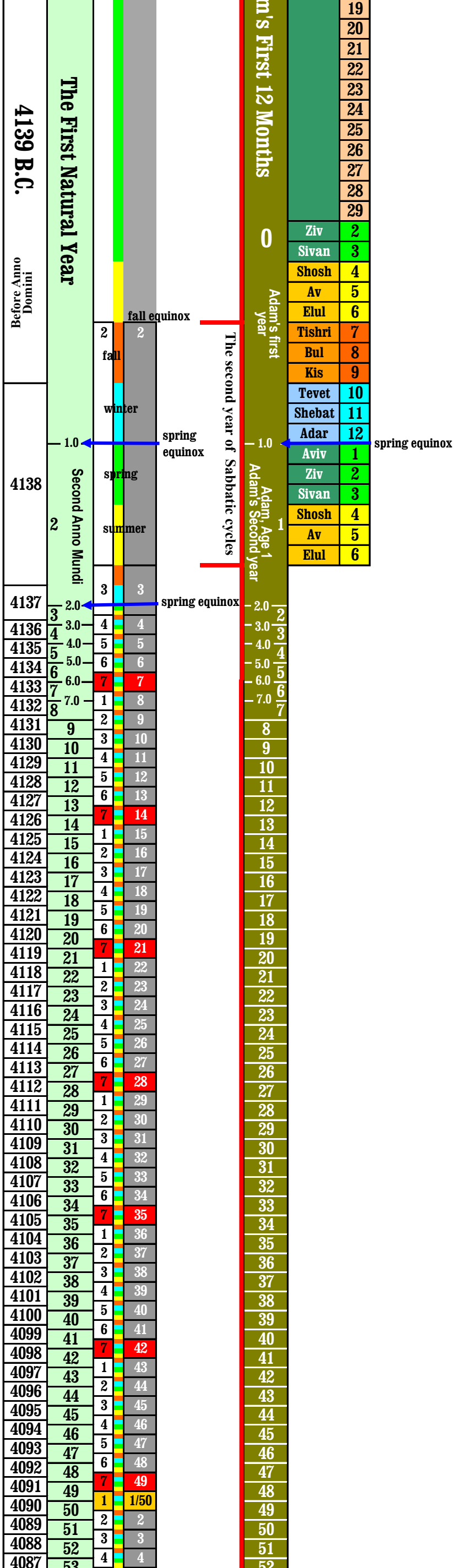
Examine the charts further and convince yourself that they are second to none. Take a look at the table of contents and the two sample commentary pages provided.

Then visit www.torahtimes.org and order yours. The ebook is just $12.00, and has the whole of biblical chronology.

The Scroll Charts

FROM GENESIS TO REVELATION





Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
G1	The first Sacred Year
G3	Adam's Life
I1	Days of 1st month
H2	Month names
I1	Month number

Scroll Legend

A	B	C	D	E	E	E	G3
4086	54	5	5	53			
4085	55	6	6	54			
4084	56	7	7	55			
4083	57	1	8	56			
4082	58	2	9	57			
4081	59	3	10	58			
4080	60	4	11	59			
4079	61	5	12	60			
4078	62	6	13	61			
4077	63	7	14	62			
4076	64	1	15	63			
4075	65	2	16	64			
4074	66	3	17	65			
4073	67	4	18	66			
4072	68	5	19	67			
4071	69	6	20	68			
4070	70	7	21	69			
4069	71	1	22	70			
4068	72	2	23	71			
4067	73	3	24	72			
4066	74	4	25	73			
4065	75	5	26	74			
4064	76	6	27	75			
4063	77	7	28	76			
4062	78	1	29	77			
4061	79	2	30	78			
4060	80	3	31	79			
4059	81	4	32	80			
4058	82	5	33	81			
4057	83	6	34	82			
4056	84	7	35	83			
4055	85	1	36	84			
4054	86	2	37	85			
4053	87	3	38	86			
4052	88	4	39	87			
4051	89	5	40	88			
4050	90	6	41	89			
4049	91	7	42	90			
4048	92	1	43	91			
4047	93	2	44	92			
4046	94	3	45	93			
4045	95	4	46	94			
4044	96	5	47	95			
4043	97	6	48	96			
4042	98	7	49	97			
4041	99	1	1/50	98			
4040	100	2	2	99			
4039	101	3	3	100			
4038	102	4	4	101			
4037	103	5	5	102			
4036	104	6	6	103			
4035	105	7	7	104			
4034	106	1	8	105			
4033	107	2	9	106			
4032	108	3	10	107			
4031	109	4	11	108			
4030	110	5	12	109			
4029	111	6	13	110			
4028	112	7	14	111			
4027	113	1	15	112			
4026	114	2	16	113			
4025	115	3	17	114			
4024	116	4	18	115			
4023	117	5	19	116			
4022	118	6	20	117			
4021	119	7	21	118			
4020	120	1	22	119			
4019	121	2	23	120			
4018	122	3	24	121			
4017	123	4	25	122			
4016	124	5	26	123			
4015	125	6	27	124			
4014	126	7	28	125			
4013	127	1	29	126			
4012	128	2	30	127			
4011	129	3	31	128			
4010	130	4	32	129			
4009	131	5	33	130	0	Gen 5:3	**Seth**
4008	132	6	34	131	1		
4007	133	7	35	132	2		
4006	134	1	36	133	3		
4005	135	2	37	134	4		

A B.C. Years
B Year of World
C Sabbatic Periods
C Sabbath Year
D Seasons

E Sabbatic Periods
E Sabbath Year
E Jubilee Year
G3 Adam's Life

Scroll Legend

A	B	C	D	E	G3	H2
4004	136	3	38	135	5	
4003	137	4	39	136	6	
4002	138	5	40	137	7	
4001	139	6	41	138	8	
4000	140	7	42	139	9	
3999	141	1	43	140	10	
3998	142	2	44	141	11	
3997	143	3	45	142	12	
3996	144	4	46	143	13	
3995	145	5	47	144	14	
3994	146	6	48	145	15	
3993	147	7	49	146	16	
3992	148	1	1/50	147	17	
3991	149	2	2	148	18	
3990	150	3	3	149	19	
3989	151	4	4	150	20	
3988	152	5	5	151	21	
3987	153	6	6	152	22	
3986	154	7	7	153	23	
3985	155	1	8	154	24	
3984	156	2	9	155	25	
3983	157	3	10	156	26	
3982	158	4	11	157	27	
3981	159	5	12	158	28	
3980	160	6	13	159	29	
3979	161	7	14	160	30	
3978	162	1	15	161	31	
3977	163	2	16	162	32	
3976	164	3	17	163	33	
3975	165	4	18	164	34	
3974	166	5	19	165	35	
3973	167	6	20	166	36	
3972	168	7	21	167	37	
3971	169	1	22	168	38	
3970	170	2	23	169	39	
3969	171	3	24	170	40	
3968	172	4	25	171	41	
3967	173	5	26	172	42	
3966	174	6	27	173	43	
3965	175	7	28	174	44	
3964	176	1	29	175	45	
3963	177	2	30	176	46	
3962	178	3	31	177	47	
3961	179	4	32	178	48	
3960	180	5	33	179	49	
3959	181	6	34	180	50	
3958	182	7	35	181	51	
3957	183	1	36	182	52	
3956	184	2	37	183	53	
3955	185	3	38	184	54	
3954	186	4	39	185	55	
3953	187	5	40	186	56	
3952	188	6	41	187	57	
3951	189	7	42	188	58	
3950	190	1	43	189	59	
3949	191	2	44	190	60	
3948	192	3	45	191	61	
3947	193	4	46	192	62	
3946	194	5	47	193	63	
3945	195	6	48	194	64	
3944	196	7	49	195	65	
3943	197	1	1/50	196	66	
3942	198	2	2	197	67	
3941	199	3	3	198	68	
3940	200	4	4	199	69	
3939	201	5	5	200	70	
3938	202	6	6	201	71	
3937	203	7	7	202	72	
3936	204	1	8	203	73	
3935	205	2	9	204	74	
3934	206	3	10	205	75	
3933	207	4	11	206	76	
3932	208	5	12	207	77	
3931	209	6	13	208	78	
3930	210	7	14	209	79	
3929	211	1	15	210	80	
3928	212	2	16	211	81	
3927	213	3	17	212	82	
3926	214	4	18	213	83	
3925	215	5	19	214	84	
3924	216	6	20	215	85	
3923	217	7	21	216	86	

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons

E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
G3	Adam's Life
H2	Seth's Life

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons

E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
G3	Adam's Life
H2	Seth's Life

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons

E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
G3	Adam's Life
H2	Seth's Life
H3	Enosh's Life

| | | |

| | | |

| | | |

A	B	C	D	E	F
3675	465	3	24	464	334	229	139	69	4
3674	466	4	25	465	335	230	140	70	5
3673	467	5	26	466	336	231	141	71	6
3672	468	6	27	467	337	232	142	72	7
3671	469	7	28	468	338	233	143	73	8
3670	470	1	29	469	339	234	144	74	9
3669	471	2	30	470	340	235	145	75	10
3668	472	3	31	471	341	236	146	76	11
3667	473	4	32	472	342	237	147	77	12
3666	474	5	33	473	343	238	148	78	13
3665	475	6	34	474	344	239	149	79	14
3664	476	7	35	475	345	240	150	80	15
3663	477	1	36	476	346	241	151	81	16
3662	478	2	37	477	347	242	152	82	17
3661	479	3	38	478	348	243	153	83	18
3660	480	4	39	479	349	244	154	84	19
3659	481	5	40	480	350	245	155	85	20
3658	482	6	41	481	351	246	156	86	21
3657	483	7	42	482	352	247	157	87	22
3656	484	1	43	483	353	248	158	88	23
3655	485	2	44	484	354	249	159	89	24
3654	486	3	45	485	355	250	160	90	25
3653	487	4	46	486	356	251	161	91	26
3652	488	5	47	487	357	252	162	92	27
3651	489	6	48	488	358	253	163	93	28
3650	490	7	49	489	359	254	164	94	29
3649	491	1	1/50	490	360	255	165	95	30
3648	492	2	2	491	361	256	166	96	31
3647	493	3	3	492	362	257	167	97	32
3646	494	4	4	493	363	258	168	98	33
3645	495	5	5	494	364	259	169	99	34
3644	496	6	6	495	365	260	170	100	35
3643	497	7	7	496	366	261	171	101	36
3642	498	1	8	497	367	262	172	102	37
3641	499	2	9	498	368	263	173	103	38
3640	500	3	10	499	369	264	174	104	39
3639	501	4	11	500	370	265	175	105	40
3638	502	5	12	501	371	266	176	106	41
3637	503	6	13	502	372	267	177	107	42
3636	504	7	14	503	373	268	178	108	43
3635	505	1	15	504	374	269	179	109	44
3634	506	2	16	505	375	270	180	110	45
3633	507	3	17	506	376	271	181	111	46
3632	508	4	18	507	377	272	182	112	47
3631	509	5	19	508	378	273	183	113	48
3630	510	6	20	509	379	274	184	114	49
3629	511	7	21	510	380	275	185	115	50
3628	512	1	22	511	381	276	186	116	51
3627	513	2	23	512	382	277	187	117	52
3626	514	3	24	513	383	278	188	118	53
3625	515	4	25	514	384	279	189	119	54
3624	516	5	26	515	385	280	190	120	55
3623	517	6	27	516	386	281	191	121	56
3622	518	7	28	517	387	282	192	122	57
3621	519	1	29	518	388	283	193	123	58
3620	520	2	30	519	389	284	194	124	59
3619	521	3	31	520	390	285	195	125	60
3618	522	4	32	521	391	286	196	126	61
3617	523	5	33	522	392	287	197	127	62
3616	524	6	34	523	393	288	198	128	63
3615	525	7	35	524	394	289	199	129	64
3614	526	1	36	525	395	290	200	130	65
3613	527	2	37	526	396	291	201	131	66
3612	528	3	38	527	397	292	202	132	67
3611	529	4	39	528	398	293	203	133	68
3610	530	5	40	529	399	294	204	134	69
3609	531	6	41	530	400	295	205	135	70
3608	532	7	42	531	401	296	206	136	71
3607	533	1	43	532	402	297	207	137	72
3606	534	2	44	533	403	298	208	138	73
3605	535	3	45	534	404	299	209	139	74
3604	536	4	46	535	405	300	210	140	75
3603	537	5	47	536	406	301	211	141	76
3602	538	6	48	537	407	302	212	142	77
3601	539	7	49	538	408	303	213	143	78
3600	540	1	1/50	539	409	304	214	144	79
3599	541	2	2	540	410	305	215	145	80
3598	542	3	3	541	411	306	216	146	81
3597	543	4	4	542	412	307	217	147	82
3596	544	5	5	543	413	308	218	148	83
3595	545	6	6	544	414	309	219	149	84
3594	546	7	7	545	415	310	220	150	85

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
G3	Adam's Life
H2	Seth's Life
H3	Enosh's Life
I2	Kenan's Life
I4	Mahalalel's Life
J2	Jared's Life

A	B	C	C	D	E	E
3593	547	1	8			
3592	548	2	9			
3591	549	3	10			
3590	550	4	11			
3589	551	5	12			
3588	552	6	13			
3587	553	7	14			
3586	554	1	15			
3585	555	2	16			
3584	556	3	17			
3583	557	4	18			
3582	558	5	19			
3581	559	6	20			
3580	560	7	21			
3579	561	1	22			
3578	562	2	23			
3577	563	3	24			
3576	564	4	25			
3575	565	5	26			
3574	566	6	27			
3573	567	7	28			
3572	568	1	29			
3571	569	2	30			
3570	570	3	31			
3569	571	4	32			
3568	572	5	33			
3567	573	6	34			
3566	574	7	35			
3565	575	1	36			
3564	576	2	37			
3563	577	3	38			
3562	578	4	39			
3561	579	5	40			
3560	580	6	41			
3559	581	7	42			
3558	582	1	43			
3557	583	2	44			
3556	584	3	45			
3555	585	4	46			
3554	586	5	47			
3553	587	6	48			
3552	588	7	49			
3551	589	1	1/50			
3550	590	2	2			
3549	591	3	3			
3548	592	4	4			
3547	593	5	5			
3546	594	6	6			
3545	595	7	7			
3544	596	1	8			
3543	597	2	9			
3542	598	3	10			
3541	599	4	11			
3540	600	5	12			
3539	601	6	13			
3538	602	7	14			
3537	603	1	15			
3536	604	2	16			
3535	605	3	17			
3534	606	4	18			
3533	607	5	19			
3532	608	6	20			
3531	609	7	21			
3530	610	1	22			
3529	611	2	23			
3528	612	3	24			
3527	613	4	25			
3526	614	5	26			
3525	615	6	27			
3524	616	7	28			
3523	617	1	29			
3522	618	2	30			
3521	619	3	31			
3520	620	4	32			
3519	621	5	33			
3518	622	6	34			
3517	623	7	35			
3516	624	1	36			
3515	625	2	37			
3514	626	3	38			
3513	627	4	39			
3512	628	5	40			
		6	41			

G3	H2	H3	I2	I4	J2	J4
546	416	311	221	151	86	
547	417	312	222	152	87	
548	418	313	223	153	88	
549	419	314	224	154	89	
550	420	315	225	155	90	
551	421	316	226	156	91	
552	422	317	227	157	92	
553	423	318	228	158	93	
554	424	319	229	159	94	
555	425	320	230	160	95	
556	426	321	231	161	96	
557	427	322	232	162	97	
558	428	323	233	163	98	
559	429	324	234	164	99	
560	430	325	235	165	100	
561	431	326	236	166	101	
562	432	327	237	167	102	
563	433	328	238	168	103	
564	434	329	239	169	104	
565	435	330	240	170	105	
566	436	331	241	171	106	
567	437	332	242	172	107	
568	438	333	243	173	108	
569	439	334	244	174	109	
570	440	335	245	175	110	
571	441	336	246	176	111	
572	442	337	247	177	112	
573	443	338	248	178	113	
574	444	339	249	179	114	
575	445	340	250	180	115	
576	446	341	251	181	116	
577	447	342	252	182	117	
578	448	343	253	183	118	
579	449	344	254	184	119	
580	450	345	255	185	120	
581	451	346	256	186	121	
582	452	347	257	187	122	
583	453	348	258	188	123	
584	454	349	259	189	124	
585	455	350	260	190	125	
586	456	351	261	191	126	
587	457	352	262	192	127	
588	458	353	263	193	128	
589	459	354	264	194	129	
590	460	355	265	195	130	
591	461	356	266	196	131	
592	462	357	267	197	132	
593	463	358	268	198	133	
594	464	359	269	199	134	
595	465	360	270	200	135	
596	466	361	271	201	136	
597	467	362	272	202	137	
598	468	363	273	203	138	
599	469	364	274	204	139	
600	470	365	275	205	140	
601	471	366	276	206	141	
602	472	367	277	207	142	
603	473	368	278	208	143	
604	474	369	279	209	144	
605	475	370	280	210	145	
606	476	371	281	211	146	
607	477	372	282	212	147	
608	478	373	283	213	148	
609	479	374	284	214	149	
610	480	375	285	215	150	
611	481	376	286	216	151	
612	482	377	287	217	152	
613	483	378	288	218	153	
614	484	379	289	219	154	
615	485	380	290	220	155	
616	486	381	291	221	156	
617	487	382	292	222	157	
618	488	383	293	223	158	
619	489	384	294	224	159	
620	490	385	295	225	160	
621	491	386	296	226	161	
622	492	387	297	227	162	0
623	493	388	298	228	163	1
624	494	389	299	229	164	2
625	495	390	300	230	165	3
626	496	391	301	231	166	4
627	497	392	302	232	167	5

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year

E	Jubilee Year
G3	Adam's Life
H2	Seth's Life
H3	Enosh's Life
I2	Kenan's Life
I4	Mahalalel's Life
J2	Jared's Life
J4	Enoch

Gen 5:18-20

Enoch

| | | |

A	B	C	C	D	E	E	G3	H2	H3	I2	J2	J4	K2
3428	712	5	26	711	581	476	386	316	251	89	24
3427	713	6	27	712	582	477	387	317	252	90	25
3426	714	7	28	713	583	478	388	318	253	91	26
3425	715	1	29	714	584	479	389	319	254	92	27
3424	716	2	30	715	585	480	390	320	255	93	28
3423	717	3	31	716	586	481	391	321	256	94	29
3422	718	4	32	717	587	482	392	322	257	95	30
3421	719	5	33	718	588	483	393	323	258	96	31
3420	720	6	34	719	589	484	394	324	259	97	32
3419	721	7	35	720	590	485	395	325	260	98	33
3418	722	1	36	721	591	486	396	326	261	99	34
3417	723	2	37	722	592	487	397	327	262	100	35
3416	724	3	38	723	593	488	398	328	263	101	36
3415	725	4	39	724	594	489	399	329	264	102	37
3414	726	5	40	725	595	490	400	330	265	103	38
3413	727	6	41	726	596	491	401	331	266	104	39
3412	728	7	42	727	597	492	402	332	267	105	40
3411	729	1	43	728	598	493	403	333	268	106	41
3410	730	2	44	729	599	494	404	334	269	107	42
3409	731	3	45	730	600	495	405	335	270	108	43
3408	732	4	46	731	601	496	406	336	271	109	44
3407	733	5	47	732	602	497	407	337	272	110	45
3406	734	6	48	733	603	498	408	338	273	111	46
3405	735	7	49	734	604	499	409	339	274	112	47
3404	736	1	1/50	735	605	500	410	340	275	113	48
3403	737	2	2	736	606	501	411	341	276	114	49
3402	738	3	3	737	607	502	412	342	277	115	50
3401	739	4	4	738	608	503	413	343	278	116	51
3400	740	5	5	739	609	504	414	344	279	117	52
3399	741	6	6	740	610	505	415	345	280	118	53
3398	742	7	7	741	611	506	416	346	281	119	54
3397	743	1	8	742	612	507	417	347	282	120	55
3396	744	2	9	743	613	508	418	348	283	121	56
3395	745	3	10	744	614	509	419	349	284	122	57
3394	746	4	11	745	615	510	420	350	285	123	58
3393	747	5	12	746	616	511	421	351	286	124	59
3392	748	6	13	747	617	512	422	352	287	125	60
3391	749	7	14	748	618	513	423	353	288	126	61
3390	750	1	15	749	619	514	424	354	289	127	62
3389	751	2	16	750	620	515	425	355	290	128	63
3388	752	3	17	751	621	516	426	356	291	129	64
3387	753	4	18	752	622	517	427	357	292	130	65
3386	754	5	19	753	623	518	428	358	293	131	66
3385	755	6	20	754	624	519	429	359	294	132	67
3384	756	7	21	755	625	520	430	360	295	133	68
3383	757	1	22	756	626	521	431	361	296	134	69
3382	758	2	23	757	627	522	432	362	297	135	70
3381	759	3	24	758	628	523	433	363	298	136	71
3380	760	4	25	759	629	524	434	364	299	137	72
3379	761	5	26	760	630	525	435	365	300	138	73
3378	762	6	27	761	631	526	436	366	301	139	74
3377	763	7	28	762	632	527	437	367	302	140	75
3376	764	1	29	763	633	528	438	368	303	141	76
3375	765	2	30	764	634	529	439	369	304	142	77
3374	766	3	31	765	635	530	440	370	305	143	78
3373	767	4	32	766	636	531	441	371	306	144	79
3372	768	5	33	767	637	532	442	372	307	145	80
3371	769	6	34	768	638	533	443	373	308	146	81
3370	770	7	35	769	639	534	444	374	309	147	82
3369	771	1	36	770	640	535	445	375	310	148	83
3368	772	2	37	771	641	536	446	376	311	149	84
3367	773	3	38	772	642	537	447	377	312	150	85
3366	774	4	39	773	643	538	448	378	313	151	86
3365	775	5	40	774	644	539	449	379	314	152	87
3364	776	6	41	775	645	540	450	380	315	153	88
3363	777	7	42	776	646	541	451	381	316	154	89
3362	778	1	43	777	647	542	452	382	317	155	90
3361	779	2	44	778	648	543	453	383	318	156	91
3360	780	3	45	779	649	544	454	384	319	157	92
3359	781	4	46	780	650	545	455	385	320	158	93
3358	782	5	47	781	651	546	456	386	321	159	94
3357	783	6	48	782	652	547	457	387	322	160	95
3356	784	7	49	783	653	548	458	388	323	161	96
3355	785	1	1/50	784	654	549	459	389	324	162	97
3354	786	2	2	785	655	550	460	390	325	163	98
3353	787	3	3	786	656	551	461	391	326	164	99
3352	788	4	4	787	657	552	462	392	327	165	100
3351	789	5	5	788	658	553	463	393	328	166	101
3350	790	6	6	789	659	554	464	394	329	167	102
3349	791	7	7	790	660	555	465	395	330	168	103
3348	792	1	8	791	661	556	466	396	331	169	104
3347	793	2	9	792	662	557	467	397	332	170	105

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year

G3	Adam's Life
H2	Seth's Life
H3	Enosh's Life
I2	Kenan's Life
I4	Mahalalel's Life
J2	Jared's Life
J4	Enoch
K2	Methuselah's Life

3346	794	3	10	793	663	558	468	398	333	171	106
3345	795	4	11	794	664	559	469	399	334	172	107
3344	796	5	12	795	665	560	470	400	335	173	108
3343	797	6	13	796	666	561	471	401	336	174	109
3342	798	7	14	797	667	562	472	402	337	175	110
3341	799	1	15	798	668	563	473	403	338	176	111
3340	800	2	16	799	669	564	474	404	339	177	112
3339	801	3	17	800	670	565	475	405	340	178	113
3338	802	4	18	801	671	566	476	406	341	179	114
3337	803	5	19	802	672	567	477	407	342	180	115
3336	804	6	20	803	673	568	478	408	343	181	116
3335	805	7	21	804	674	569	479	409	344	182	117
3334	806	1	22	805	675	570	480	410	345	183	118
3333	807	2	23	806	676	571	481	411	346	184	119
3332	808	3	24	807	677	572	482	412	347	185	120
3331	809	4	25	808	678	573	483	413	348	186	121
3330	810	5	26	809	679	574	484	414	349	187	122
3329	811	6	27	810	680	575	485	415	350	188	123
3328	812	7	28	811	681	576	486	416	351	189	124
3327	813	1	29	812	682	577	487	417	352	190	125
3326	814	2	30	813	683	578	488	418	353	191	126
3325	815	3	31	814	684	579	489	419	354	192	127
3324	816	4	32	815	685	580	490	420	355	193	128
3323	817	5	33	816	686	581	491	421	356	194	129
3322	818	6	34	817	687	582	492	422	357	195	130
3321	819	7	35	818	688	583	493	423	358	196	131
3320	820	1	36	819	689	584	494	424	359	197	132
3319	821	2	37	820	690	585	495	425	360	198	133
3318	822	3	38	821	691	586	496	426	361	199	134
3317	823	4	39	822	692	587	497	427	362	200	135
3316	824	5	40	823	693	588	498	428	363	201	136
3315	825	6	41	824	694	589	499	429	364	202	137
3314	826	7	42	825	695	590	500	430	365	203	138
3313	827	1	43	826	696	591	501	431	366	204	139
3312	828	2	44	827	697	592	502	432	367	205	140
3311	829	3	45	828	698	593	503	433	368	206	141
3310	830	4	46	829	699	594	504	434	369	207	142
3309	831	5	47	830	700	595	505	435	370	208	143
3308	832	6	48	831	701	596	506	436	371	209	144
3307	833	7	49	832	702	597	507	437	372	210	145
3306	834	1	1/50	833	703	598	508	438	373	211	146
3305	835	2	2	834	704	599	509	439	374	212	147
3304	836	3	3	835	705	600	510	440	375	213	148
3303	837	4	4	836	706	601	511	441	376	214	149
3302	838	5	5	837	707	602	512	442	377	215	150
3301	839	6	6	838	708	603	513	443	378	216	151
3300	840	7	7	839	709	604	514	444	379	217	152
3299	841	1	8	840	710	605	515	445	380	218	153
3298	842	2	9	841	711	606	516	446	381	219	154
3297	843	3	10	842	712	607	517	447	382	220	155
3296	844	4	11	843	713	608	518	448	383	221	156
3295	845	5	12	844	714	609	519	449	384	222	157
3294	846	6	13	845	715	610	520	450	385	223	158
3293	847	7	14	846	716	611	521	451	386	224	159
3292	848	1	15	847	717	612	522	452	387	225	160
3291	849	2	16	848	718	613	523	453	388	226	161
3290	850	3	17	849	719	614	524	454	389	227	162
3289	851	4	18	850	720	615	525	455	390	228	163
3288	852	5	19	851	721	616	526	456	391	229	164
3287	853	6	20	852	722	617	527	457	392	230	165
3286	854	7	21	853	723	618	528	458	393	231	166
3285	855	1	22	854	724	619	529	459	394	232	167
3284	856	2	23	855	725	620	530	460	395	233	168
3283	857	3	24	856	726	621	531	461	396	234	169
3282	858	4	25	857	727	622	532	462	397	235	170
3281	859	5	26	858	728	623	533	463	398	236	171
3280	860	6	27	859	729	624	534	464	399	237	172
3279	861	7	28	860	730	625	535	465	400	238	173
3278	862	1	29	861	731	626	536	466	401	239	174
3277	863	2	30	862	732	627	537	467	402	240	175
3276	864	3	31	863	733	628	538	468	403	241	176
3275	865	4	32	864	734	629	539	469	404	242	177
3274	866	5	33	865	735	630	540	470	405	243	178
3273	867	6	34	866	736	631	541	471	406	244	179
3272	868	7	35	867	737	632	542	472	407	245	180
3271	869	1	36	868	738	633	543	473	408	246	181
3270	870	2	37	869	739	634	544	474	409	247	182
3269	871	3	38	870	740	635	545	475	410	248	183
3268	872	4	39	871	741	636	546	476	411	249	184
3267	873	5	40	872	742	637	547	477	412	250	185
3266	874	6	41	873	743	638	548	478	413	251	186
3265	875	7	42	874	744	639	549	479	414	252	187	0

Gen 5:25-27

Lamech

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year

G3	Adam's Life
H2	Seth's Life
H3	Enosh's Life
I2	Kenan's Life
I4	Mahalalel's Life
J2	Jared's Life
J4	Enoch
K2	Methuselah's Life
K4	Lamech's Life

3264	876	1	43	875	745	640	550	480	415	253	188	1
3263	877	2	44	876	746	641	551	481	416	254	189	2
3262	878	3	45	877	747	642	552	482	417	255	190	3
3261	879	4	46	878	748	643	553	483	418	256	191	4
3260	880	5	47	879	749	644	554	484	419	257	192	5
3259	881	6	48	880	750	645	555	485	420	258	193	6
3258	882	7	49	881	751	646	556	486	421	259	194	7
3257	883	1	1/50	882	752	647	557	487	422	260	195	8
3256	884	2	2	883	753	648	558	488	423	261	196	9
3255	885	3	3	884	754	649	559	489	424	262	197	10
3254	886	4	4	885	755	650	560	490	425	263	198	11
3253	887	5	5	886	756	651	561	491	426	264	199	12
3252	888	6	6	887	757	652	562	492	427	265	200	13
3251	889	7	7	888	758	653	563	493	428	266	201	14
3250	890	1	8	889	759	654	564	494	429	267	202	15
3249	891	2	9	890	760	655	565	495	430	268	203	16
3248	892	3	10	891	761	656	566	496	431	269	204	17
3247	893	4	11	892	762	657	567	497	432	270	205	18
3246	894	5	12	893	763	658	568	498	433	271	206	19
3245	895	6	13	894	764	659	569	499	434	272	207	20
3244	896	7	14	895	765	660	570	500	435	273	208	21
3243	897	1	15	896	766	661	571	501	436	274	209	22
3242	898	2	16	897	767	662	572	502	437	275	210	23
3241	899	3	17	898	768	663	573	503	438	276	211	24
3240	900	4	18	899	769	664	574	504	439	277	212	25
3239	901	5	19	900	770	665	575	505	440	278	213	26
3238	902	6	20	901	771	666	576	506	441	279	214	27
3237	903	7	21	902	772	667	577	507	442	280	215	28
3236	904	1	22	903	773	668	578	508	443	281	216	29
3235	905	2	23	904	774	669	579	509	444	282	217	30
3234	906	3	24	905	775	670	580	510	445	283	218	31
3233	907	4	25	906	776	671	581	511	446	284	219	32
3232	908	5	26	907	777	672	582	512	447	285	220	33
3231	909	6	27	908	778	673	583	513	448	286	221	34
3230	910	7	28	909	779	674	584	514	449	287	222	35
3229	911	1	29	910	780	675	585	515	450	288	223	36
3228	912	2	30	911	781	676	586	516	451	289	224	37
3227	913	3	31	912	782	677	587	517	452	290	225	38
3226	914	4	32	913	783	678	588	518	453	291	226	39
3225	915	5	33	914	784	679	589	519	454	292	227	40
3224	916	6	34	915	785	680	590	520	455	293	228	41
3223	917	7	35	916	786	681	591	521	456	294	229	42
3222	918	1	36	917	787	682	592	522	457	295	230	43
3221	919	2	37	918	788	683	593	523	458	296	231	44
3220	920	3	38	919	789	684	594	524	459	297	232	45
3219	921	4	39	920	790	685	595	525	460	298	233	46
3218	922	5	40	921	791	686	596	526	461	299	234	47
3217	923	6	41	922	792	687	597	527	462	300	235	48
3216	924	7	42	923	793	688	598	528	463	301	236	49
3215	925	1	43	924	794	689	599	529	464	302	237	50
3214	926	2	44	925	795	690	600	530	465	303	238	51
3213	927	3	45	926	796	691	601	531	466	304	239	52
3212	928	4	46	927	797	692	602	532	467	305	240	53
3211	929	5	47	928	798	693	603	533	468	306	241	54
3210	930	6	48	929	799	694	604	534	469	307	242	55
3209	931	7	49	930	800	695	605	535	470	308	243	56
3208	932	1	1/50		801	696	606	536	471	309	244	57
3207	933	2	2		802	697	607	537	472	310	245	58
3206	934	3	3		803	698	608	538	473	311	246	59
3205	935	4	4		804	699	609	539	474	312	247	60
3204	936	5	5		805	700	610	540	475	313	248	61
3203	937	6	6		806	701	611	541	476	314	249	62
3202	938	7	7		807	702	612	542	477	315	250	63
3201	939	1	8		808	703	613	543	478	316	251	64
3200	940	2	9		809	704	614	544	479	317	252	65
3199	941	3	10		810	705	615	545	480	318	253	66
3198	942	4	11		811	706	616	546	481	319	254	67
3197	943	5	12		812	707	617	547	482	320	255	68
3196	944	6	13		813	708	618	548	483	321	256	69
3195	945	7	14		814	709	619	549	484	322	257	70
3194	946	1	15		815	710	620	550	485	323	258	71
3193	947	2	16		816	711	621	551	486	324	259	72
3192	948	3	17		817	712	622	552	487	325	260	73
3191	949	4	18		818	713	623	553	488	326	261	74
3190	950	5	19		819	714	624	554	489	327	262	75
3189	951	6	20		820	715	625	555	490	328	263	76
3188	952	7	21		821	716	626	556	491	329	264	77
3187	953	1	22		822	717	627	557	492	330	265	78
3186	954	2	23		823	718	628	558	493	331	266	79
3185	955	3	24		824	719	629	559	494	332	267	80
3184	956	4	25		825	720	630	560	495	333	268	81
3183	957	5	26		826	721	631	561	496	334	269	82
3182	958	6	27		827	722	632	562	497	335	270	83

Adam dies

Gen 5:4-5

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year

G3	Adam's Life
H2	Seth's Life
H3	Enosh's Life
I2	Kenan's Life
I4	Mahalalel's Life
J2	Jared's Life
J4	Enoch
K2	Methuselah's Life
K4	Lamech's Life

A	B	C	C	D	E	E	H2	H3	I2	I4	J2	J4	J4	K2	K4
3181	959	1	29	827	722	632	562	497	335	270	83				
3180	960	2	30	828	723	633	563	498	336	271	84				
3179	961	3	31	829	724	634	564	499	337	272	85				
3178	962	4	32	830	725	635	565	500	338	273	86				
3177	963	5	33	831	726	636	566	501	339	274	87				
3176	964	6	34	832	727	637	567	502	340	275	88				
3175	965	7	35	833	728	638	568	503	341	276	89				
3174	966	1	36	834	729	639	569	504	342	277	90				
3173	967	2	37	835	730	640	570	505	343	278	91				
3172	968	3	38	836	731	641	571	506	344	279	92				
3171	969	4	39	837	732	642	572	507	345	280	93				
3170	970	5	40	838	733	643	573	508	346	281	94				
3169	971	6	41	839	734	644	574	509	347	282	95				
3168	972	7	42	840	735	645	575	510	348	283	96				
3167	973	1	43	841	736	646	576	511	349	284	97				
3166	974	2	44	842	737	647	577	512	350	285	98				
3165	975	3	45	843	738	648	578	513	351	286	99				
3164	976	4	46	844	739	649	579	514	352	287	100				
3163	977	5	47	845	740	650	580	515	353	288	101				
3162	978	6	48	846	741	651	581	516	354	289	102				
3161	979	7	49	847	742	652	582	517	355	290	103				
3160	980	1	1/50	848	743	653	583	518	356	291	104				
3159	981	2	2	849	744	654	584	519	357	292	105				
3158	982	3	3	850	745	655	585	520	358	293	106				
3157	983	4	4	851	746	656	586	521	359	294	107				
3156	984	5	5	852	747	657	587	522	360	295	108				
3155	985	6	6	853	748	658	588	523	361	296	109				
3154	986	7	7	854	749	659	589	524	362	297	110				
3153	987	1	8	855	750	660	590	525	363	298	111				
3152	988	2	9	856	751	661	591	526	364	299	112				
3151	989	3	10	857	752	662	592	527	365	300	113				
3150	990	4	11	858	753	663	593	528	366	301	114				
3149	991	5	12	859	754	664	594	529	367	302	115				
3148	992	6	13	860	755	665	595	530	368	303	116				
3147	993	7	14	861	756	666	596	531	369	304	117				
3146	994	1	15	862	757	667	597	532	370	305	118				
3145	995	2	16	863	758	668	598	533	371	306	119				
3144	996	3	17	864	759	669	599	534	372	307	120				
3143	997	4	18	865	760	670	600	535	373	308	121				
3142	998	5	19	866	761	671	601	536	374	309	122				
3141	999	6	20	867	762	672	602	537	375	310	123				
3140	1000	7	21	868	763	673	603	538	376	311	124				
3139	1001	1	22	869	764	674	604	539	377	312	125				
3138	1002	2	23	870	765	675	605	540	378	313	126				
3137	1003	3	24	871	766	676	606	541	379	314	127				
3136	1004	4	25	872	767	677	607	542	380	315	128				
3135	1005	5	26	873	768	678	608	543	381	316	129				
3134	1006	6	27	874	769	679	609	544	382	317	130				
3133	1007	7	28	875	770	680	610	545	383	318	131				
3132	1008	1	29	876	771	681	611	546	384	319	132				
3131	1009	2	30	877	772	682	612	547	385	320	133				
3130	1010	3	31	878	773	683	613	548	386	321	134				
3129	1011	4	32	879	774	684	614	549	387	322	135				
3128	1012	5	33	880	775	685	615	550	388	323	136				
3127	1013	6	34	881	776	686	616	551	389	324	137				
3126	1014	7	35	882	777	687	617	552	390	325	138				
3125	1015	1	36	883	778	688	618	553	391	326	139				
3124	1016	2	37	884	779	689	619	554	392	327	140				
3123	1017	3	38	885	780	690	620	555	393	328	141				
3122	1018	4	39	886	781	691	621	556	394	329	142				
3121	1019	5	40	887	782	692	622	557	395	330	143				
3120	1020	6	41	888	783	693	623	558	396	331	144				
3119	1021	7	42	889	784	694	624	559	397	332	145				
3118	1022	1	43	890	785	695	625	560	398	333	146				
3117	1023	2	44	891	786	696	626	561	399	334	147				
3116	1024	3	45	892	787	697	627	562	400	335	148				
3115	1025	4	46	893	788	698	628	563	401	336	149				
3114	1026	5	47	894	789	699	629	564	402	337	150				
3113	1027	6	48	895	790	700	630	565	403	338	151				
3112	1028	7	49	896	791	701	631	566	404	339	152				
3111	1029	1	1/50	897	792	702	632	567	405	340	153				
3110	1030	2	2	898	793	703	633	568	406	341	154				
3109	1031	3	3	899	794	704	634	569	407	342	155				
3108	1032	4	4	900	795	705	635	570	408	343	156				
3107	1033	5	5	901	796	706	636	571	409	344	157				
3106	1034	6	6	902	797	707	637	572	410	345	158				
3105	1035	7	7	903	798	708	638	573	411	346	159				
3104	1036	1	8	904	799	709	639	574	412	347	160				
3103	1037	2	9	905	800	710	640	575	413	348	161				
3102	1038	3	10	906	801	711	641	576	414	349	162				
3101	1039	4	11	907	802	712	642	577	415	350	163				
3100	1040	5	12	908	803	713	643	578	416	351	164				

Gen 5:21-24

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
H2	Seth's Life
H3	Enosh's Life
I2	Kenan's Life
I4	Mahalalel's Life
J2	Jared's Life
J4	Enoch
J4	Jared's Life after Enoch born
K2	Methuselah's Life
K4	Lamech's Life

Noah

Gen 5:7-8
Seth dies

Gen 5:28-31

| | | |

A	B	C	C	D	E	E	E	H3	I2	I4	J4	J2	K2	K4	L2
3017	1123	3	45	887	797	727	662	500	435	248	66								
3016	1124	4	46	888	798	728	663	501	436	249	67								
3015	1125	5	47	889	799	729	664	502	437	250	68								
3014	1126	6	48	890	800	730	665	503	438	251	69								
3013	1127	7	49	891	801	731	666	504	439	252	70								
3012	1128	1	1/50	892	802	732	667	505	440	253	71								
3011	1129	2	2	893	803	733	668	506	441	254	72								
3010	1130	3	3	894	804	734	669	507	442	255	73								
3009	1131	4	4	895	805	735	670	508	443	256	74								
3008	1132	5	5	896	806	736	671	509	444	257	75								
3007	1133	6	6	897	807	737	672	510	445	258	76								
3006	1134	7	7	898	808	738	673	511	446	259	77								
3005	1135	1	8	899	809	739	674	512	447	260	78								
3004	1136	2	9	900	810	740	675	513	448	261	79								
3003	1137	3	10	901	811	741	676	514	449	262	80								
3002	1138	4	11	902	812	742	677	515	450	263	81								
3001	1139	5	12	903	813	743	678	516	451	264	82								
3000	1140	6	13	904	814	744	679	517	452	265	83								
2999	1141	7	14	905	815	745	680	518	453	266	84								
2998	1142	1	15		816	746	681	519	454	267	85								
2997	1143	2	16		817	747	682	520	455	268	86								
2996	1144	3	17		818	748	683	521	456	269	87								
2995	1145	4	18		819	749	684	522	457	270	88								
2994	1146	5	19		820	750	685	523	458	271	89								
2993	1147	6	20		821	751	686	524	459	272	90								
2992	1148	7	21		822	752	687	525	460	273	91								
2991	1149	1	22		823	753	688	526	461	274	92								
2990	1150	2	23		824	754	689	527	462	275	93								
2989	1151	3	24		825	755	690	528	463	276	94								
2988	1152	4	25		826	756	691	529	464	277	95								
2987	1153	5	26		827	757	692	530	465	278	96								
2986	1154	6	27		828	758	693	531	466	279	97								
2985	1155	7	28		829	759	694	532	467	280	98								
2984	1156	1	29		830	760	695	533	468	281	99								
2983	1157	2	30		831	761	696	534	469	282	100								
2982	1158	3	31		832	762	697	535	470	283	101								
2981	1159	4	32		833	763	698	536	471	284	102								
2980	1160	5	33		834	764	699	537	472	285	103								
2979	1161	6	34		835	765	700	538	473	286	104								
2978	1162	7	35		836	766	701	539	474	287	105								
2977	1163	1	36		837	767	702	540	475	288	106								
2976	1164	2	37		838	768	703	541	476	289	107								
2975	1165	3	38		839	769	704	542	477	290	108								
2974	1166	4	39		840	770	705	543	478	291	109								
2973	1167	5	40		841	771	706	544	479	292	110								
2972	1168	6	41		842	772	707	545	480	293	111								
2971	1169	7	42		843	773	708	546	481	294	112								
2970	1170	1	43		844	774	709	547	482	295	113								
2969	1171	2	44		845	775	710	548	483	296	114								
2968	1172	3	45		846	776	711	549	484	297	115								
2967	1173	4	46		847	777	712	550	485	298	116								
2966	1174	5	47		848	778	713	551	486	299	117								
2965	1175	6	48		849	779	714	552	487	300	118								
2964	1176	7	49		850	780	715	553	488	301	119								
2963	1177	1	1/50		851	781	716	554	489	302	120								
2962	1178	2	2		852	782	717	555	490	303	121								
2961	1179	3	3		853	783	718	556	491	304	122								
2960	1180	4	4		854	784	719	557	492	305	123								
2959	1181	5	5		855	785	720	558	493	306	124								
2958	1182	6	6		856	786	721	559	494	307	125								
2957	1183	7	7		857	787	722	560	495	308	126								
2956	1184	1	8		858	788	723	561	496	309	127								
2955	1185	2	9		859	789	724	562	497	310	128								
2954	1186	3	10		860	790	725	563	498	311	129								
2953	1187	4	11		861	791	726	564	499	312	130								
2952	1188	5	12		862	792	727	565	500	313	131								
2951	1189	6	13		863	793	728	566	501	314	132								
2950	1190	7	14		864	794	729	567	502	315	133								
2949	1191	1	15		865	795	730	568	503	316	134								
2948	1192	2	16		866	796	731	569	504	317	135								
2947	1193	3	17		867	797	732	570	505	318	136								
2946	1194	4	18		868	798	733	571	506	319	137								
2945	1195	5	19		869	799	734	572	507	320	138								
2944	1196	6	20		870	800	735	573	508	321	139								
2943	1197	7	21		871	801	736	574	509	322	140								
2942	1198	1	22		872	802	737	575	510	323	141								
2941	1199	2	23		873	803	738	576	511	324	142								
2940	1200	3	24		874	804	739	577	512	325	143								
2939	1201	4	25		875	805	740	578	513	326	144								
2938	1202	5	26		876	806	741	579	514	327	145								
2937	1203	6	27		877	807	742	580	515	328	146								
2936	1204	7	28		878	808	743	581	516	329	147								

Gen 5:10-11
Enosh dies

Scroll Legend

A	B.C. Years	H3	Enosh's Life
B	Year of World	I2	Kenan's Life
C	Sabbatic Periods	I4	Mahalalel's Life
C	Sabbath Year	J4	Jared's Life after Enoch born
D	Seasons	J2	Jared's Life
E	Sabbatic Periods	K2	Methuselah's Life
E	Sabbath Year	K4	Lamech's Life
E	Jubilee Year	L2	Noah's Life

Scroll Legend

A	B	C	D	E	F	G
2935	1205	1	29	879	809	744	582	517	330	148
2934	1206	2	30	880	810	745	583	518	331	149
2933	1207	3	31	881	811	746	584	519	332	150
2932	1208	4	32	882	812	747	585	520	333	151
2931	1209	5	33	883	813	748	586	521	334	152
2930	1210	6	34	884	814	749	587	522	335	153
2929	1211	7	35	885	815	750	588	523	336	154
2928	1212	1	36	886	816	751	589	524	337	155
2927	1213	2	37	887	817	752	590	525	338	156
2926	1214	3	38	888	818	753	591	526	339	157
2925	1215	4	39	889	819	754	592	527	340	158
2924	1216	5	40	890	820	755	593	528	341	159
2923	1217	6	41	891	821	756	594	529	342	160
2922	1218	7	42	892	822	757	595	530	343	161
2921	1219	1	43	893	823	758	596	531	344	162
2920	1220	2	44	894	824	759	597	532	345	163
2919	1221	3	45	895	825	760	598	533	346	164
2918	1222	4	46	896	826	761	599	534	347	165
2917	1223	5	47	897	827	762	600	535	348	166
2916	1224	6	48	898	828	763	601	536	349	167
2915	1225	7	49	899	829	764	602	537	350	168
2914	1226	1	1/50	900	830	765	603	538	351	169
2913	1227	2	2	901	831	766	604	539	352	170
2912	1228	3	3	902	832	767	605	540	353	171
2911	1229	4	4	903	833	768	606	541	354	172
2910	1230	5	5	904	834	769	607	542	355	173
2909	1231	6	6	905	835	770	608	543	356	174
2908	1232	7	7	906	836	771	609	544	357	175
2907	1233	1	8	907	837	772	610	545	358	176
2906	1234	2	9	908	838	773	611	546	359	177
2905	1235	3	10	909	839	774	612	547	360	178
2904	1236	4	11	910	840	775	613	548	361	179
2903	1237	5	12		841	776	614	549	362	180
2902	1238	6	13		842	777	615	550	363	181
2901	1239	7	14		843	778	616	551	364	182
2900	1240	1	15		844	779	617	552	365	183
2899	1241	2	16		845	780	618	553	366	184
2898	1242	3	17		846	781	619	554	367	185
2897	1243	4	18		847	782	620	555	368	186
2896	1244	5	19		848	783	621	556	369	187
2895	1245	6	20		849	784	622	557	370	188
2894	1246	7	21		850	785	623	558	371	189
2893	1247	1	22		851	786	624	559	372	190
2892	1248	2	23		852	787	625	560	373	191
2891	1249	3	24		853	788	626	561	374	192
2890	1250	4	25		854	789	627	562	375	193
2889	1251	5	26		855	790	628	563	376	194
2888	1252	6	27		856	791	629	564	377	195
2887	1253	7	28		857	792	630	565	378	196
2886	1254	1	29		858	793	631	566	379	197
2885	1255	2	30		859	794	632	567	380	198
2884	1256	3	31		860	795	633	568	381	199
2883	1257	4	32		861	796	634	569	382	200
2882	1258	5	33		862	797	635	570	383	201
2881	1259	6	34		863	798	636	571	384	202
2880	1260	7	35		864	799	637	572	385	203
2879	1261	1	36		865	800	638	573	386	204
2878	1262	2	37		866	801	639	574	387	205
2877	1263	3	38		867	802	640	575	388	206
2876	1264	4	39		868	803	641	576	389	207
2875	1265	5	40		869	804	642	577	390	208
2874	1266	6	41		870	805	643	578	391	209
2873	1267	7	42		871	806	644	579	392	210
2872	1268	1	43		872	807	645	580	393	211
2871	1269	2	44		873	808	646	581	394	212
2870	1270	3	45		874	809	647	582	395	213
2869	1271	4	46		875	810	648	583	396	214
2868	1272	5	47		876	811	649	584	397	215
2867	1273	6	48		877	812	650	585	398	216
2866	1274	7	49		878	813	651	586	399	217
2865	1275	1	1/50		879	814	652	587	400	218
2864	1276	2	2		880	815	653	588	401	219
2863	1277	3	3		881	816	654	589	402	220
2862	1278	4	4		882	817	655	590	403	221
2861	1279	5	5		883	818	656	591	404	222
2860	1280	6	6		884	819	657	592	405	223
2859	1281	7	7		885	820	658	593	406	224
2858	1282	1	8		886	821	659	594	407	225
2857	1283	2	9		887	822	660	595	408	226
2856	1284	3	10		888	823	661	596	409	227
2855	1285	4	11		889	824	662	597	410	228
2854	1286	5	12		890	825	663	598	411	229
2853	1287	6	13							

Kenan dies

Gen 5:13-14

Scroll Legend

A	B.C. Years	E	Jubilee Year
B	Year of World	I2	Kenan's Life
C	Sabbatic Periods	I4	Mahalalel's Life
C	Sabbath Year	J2	Jared's Life
D	Seasons	J4	Jared's Life after Enoch born
E	Sabbatic Periods	K2	Methuselah's Life
E	Sabbath Year	K4	Lamech's Life
		L2	Noah's Life

Scroll Legend

A B.C. Years
B Year of World
C Sabbatic Periods
C Sabbath Year
E Jubilee Year
I4 Mahalalel's Life
J2 Jared's Life
K2 Methuselah's Life

A	B	C	D	E
2852	1288	1	15	
2851	1289	2	16	
2850	1290	3	17	
2849	1291	4	18	
2848	1292	5	19	
2847	1293	6	20	
2846	1294	7	21	
2845	1295	1	22	
2844	1296	2	23	
2843	1297	3	24	
2842	1298	4	25	
2841	1299	5	26	
2840	1300	6	27	
2839	1301	7	28	
2838	1302	1	29	
2837	1303	2	30	
2836	1304	3	31	
2835	1305	4	32	
2834	1306	5	33	
2833	1307	6	34	
2832	1308	7	35	
2831	1309	1	36	
2830	1310	2	37	
2829	1311	3	38	
2828	1312	4	39	
2827	1313	5	40	
2826	1314	6	41	
2825	1315	7	42	
2824	1316	1	43	
2823	1317	2	44	
2822	1318	3	45	
2821	1319	4	46	
2820	1320	5	47	
2819	1321	6	48	
2818	1322	7	49	
2817	1323	1	1/50	
2816	1324	2	2	
2815	1325	3	3	
2814	1326	4	4	
2813	1327	5	5	
2812	1328	6	6	
2811	1329	7	7	
2810	1330	1	8	
2809	1331	2	9	
2808	1332	3	10	
2807	1333	4	11	
2806	1334	5	12	
2805	1335	6	13	
2804	1336	7	14	
2803	1337	1	15	
2802	1338	2	16	
2801	1339	3	17	
2800	1340	4	18	
2799	1341	5	19	
2798	1342	6	20	
2797	1343	7	21	
2796	1344	1	22	
2795	1345	2	23	
2794	1346	3	24	
2793	1347	4	25	
2792	1348	5	26	
2791	1349	6	27	
2790	1350	7	28	
2789	1351	1	29	
2788	1352	2	30	
2787	1353	3	31	
2786	1354	4	32	
2785	1355	5	33	
2784	1356	6	34	
2783	1357	7	35	
2782	1358	1	36	
2781	1359	2	37	
2780	1360	3	38	
2779	1361	4	39	
2778	1362	5	40	
2777	1363	6	41	
2776	1364	7	42	
2775	1365	1	43	
2774	1366	2	44	
2773	1367	3	45	
2772	1368	4	46	
2771	1369	5	47	
2770	1370	6	48	
2769	1371	7	49	
2768	1372	1	1/50	
2767	1373	2	2	
2766	1374	3	3	
2765	1375	4	4	
2764	1376	5	5	
2763	1377	6	6	
2762	1378	7	7	
2761	1379	1	8	
2760	1380	2	9	
2759	1381	3	10	
2758	1382	4	11	
2757	1383	5	12	
2756	1384	6	13	
2755	1385	7	14	
2754	1386	1	15	
2753	1387	2	16	
2752	1388	3	17	
2751	1389	4	18	
2750	1390	5	19	
2749	1391	6	20	
2748	1392	7	21	
2747	1393	1	22	
2746	1394	2	23	
2745	1395	3	24	
2744	1396	4	25	
2743	1397	5	26	
2742	1398	6	27	
2741	1399	7	28	
2740	1400	1	29	
2739	1401	2	30	
2738	1402	3	31	
2737	1403	4	32	
2736	1404	5	33	
2735	1405	6	34	
2734	1406	7	35	
2733	1407	1	36	
2732	1408	2	37	
2731	1409	3	38	
2730	1410	4	39	
2729	1411	5	40	
2728	1412	6	41	
2727	1413	7	42	
2726	1414	1	43	
2725	1415	2	44	
2724	1416	3	45	
2723	1417	4	46	
2722	1418	5	47	
2721	1419	6	48	
2720	1420	7	49	
2719	1421	1	1/50	
2718	1422	2	2	
2717	1423	3	3	
2716	1424	4	4	
2715	1425	5	5	
2714	1426	6	6	
2713	1427	7	7	
2712	1428	1	8	
2711	1429	2	9	
2710	1430	3	10	
2709	1431	4	11	
2708	1432	5	12	
2707	1433	6	13	
2706	1434	7	14	
2705	1435	1	15	
2704	1436	2	16	
2703	1437	3	17	
2702	1438	4	18	
2701	1439	5	19	
2700	1440	6	20	
2699	1441	7	21	
2698	1442	1	22	
2697	1443	2	23	
2696	1444	3	24	
2695	1445	4	25	
2694	1446	5	26	
2693	1447	6	27	
2692	1448	7	28	
2691	1449	1	29	
2690	1450	2	30	
2689	1451	3	31	
2688	1452	4	32	
2687	1453	5	33	
2686	1454	6	34	
2685	1455	7	35	
2684	1456	1	36	
2683	1457	2	37	
2682	1458	3	38	
2681	1459	4	39	
2680	1460	5	40	
2679	1461	6	41	
2678	1462	7	42	
2677	1463	1	43	
2676	1464	2	44	
2675	1465	3	45	
2674	1466	4	46	
2673	1467	5	47	
2672	1468	6	48	
2671	1469	7	49	
2670	1470	1	1/50	
2669	1471	2	2	
2668	1472	3	3	
2667	1473	4	4	
2666	1474	5	5	
2665	1475	6	6	
2664	1476	7	7	
2663	1477	1	8	
2662	1478	2	9	
2661	1479	3	10	
2660	1480	4	11	
2659	1481	5	12	
2658	1482	6	13	
2657	1483	7	14	
2656	1484	1	15	
2655	1485	2	16	
2654	1486	3	17	
2653	1487	4	18	
2652	1488	5	19	
2651	1489	6	20	
2650	1490	7	21	
2649	1491	1	22	
2648	1492	2	23	
2647	1493	3	24	
2646	1494	4	25	
2645	1495	5	26	
2644	1496	6	27	
2643	1497	7	28	
2642	1498	1	29	
2641	1499	2	30	
2640	1500	3	31	
2639	1501	4	32	
2638	1502	5	33	
2637	1503	6	34	
2636	1504	7	35	
2635	1505	1	36	
2634	1506	2	37	
2633	1507	3	38	
2632	1508	4	39	
2631	1509	5	40	
2630	1510	6	41	
2629	1511	7	42	
2628	1512	1	43	
2627	1513	2	44	
2626	1514	3	45	
2625	1515	4	46	
2624	1516	5	47	
2623	1517	6	48	
2622	1518	7	49	
2621	1519	1	1/50	
2620	1520	2	2	
2619	1521	3	3	
2618	1522	4	4	
2617	1523	5	5	
2616	1524	6	6	
2615	1525	7	7	
2614	1526	1	8	
2613	1527	2	9	
2612	1528	3	10	
2611	1529	4	11	
2610	1530	5	12	
2609	1531	6	13	
2608	1532	7	14	
2607	1533	1	15	
2606	1534	2	16	
2605	1535	3	17	
2604	1536	4	18	
2603	1537	5	19	
2602	1538	6	20	
2601	1539	7	21	
2600	1540	1	22	
2599	1541	2	23	
2598	1542	3	24	
2597	1543	4	25	
2596	1544	5	26	
2595	1545	6	27	
2594	1546	7	28	
2593	1547	1	29	
2592	1548	2	30	
2591	1549	3	31	
2590	1550	4	32	
2589	1551	5	33	
2588	1552	6	34	
2587	1553	7	35	
2586	1554	1	36	
2585	1555	2	37	
2584	1556	3	38	
2583	1557	4	39	
2582	1558	5	40	
2581	1559	6	41	
2580	1560	7	42	
2579	1561	1	43	
2578	1562	2	44	
2577	1563	3	45	
2576	1564	4	46	
2575	1565	5	47	
2574	1566	6	48	
2573	1567	7	49	
2572	1568	1	1/50	
2571	1569	2	2	
2570	1570	3	3	
2569	1571	4	4	
2568	1572	5	5	
2567	1573	6	6	
2566	1574	7	7	
2565	1575	1	8	
2564	1576	2	9	
2563	1577	3	10	
2562	1578	4	11	
2561	1579	5	12	
2560	1580	6	13	
2559	1581	7	14	
2558	1582	1	15	
2557	1583	2	16	
2556	1584	3	17	
2555	1585	4	18	
2554	1586	5	19	
2553	1587	6	20	
2552	1588	7	21	
2551	1589	1	22	
2550	1590	2	23	
2549	1591	3	24	
2548	1592	4	25	
2547	1593	5	26	
2546	1594	6	27	
2545	1595	7	28	
2544	1596	1	29	
2543	1597	2	30	
2542	1598	3	31	
2541	1599	4	32	
2540	1600	5	33	
2539	1601	6	34	
2538	1602	7	35	
2537	1603	1	36	
2536	1604	2	37	
2535	1605	3	38	
2534	1606	4	39	
2533	1607	5	40	
2532	1608	6	41	
2531	1609	7	42	
2530	1610	1	43	
2529	1611	2	44	
2528	1612	3	45	
2527	1613	4	46	
2526	1614	5	47	
2525	1615	6	48	
2524	1616	7	49	
2523	1617	1	1/50	
2522	1618	2	2	
2521	1619	3	3	
2520	1620	4	4	
2519	1621	5	5	
2518	1622	6	6	
2517	1623	7	7	
2516	1624	1	8	
2515	1625	2	9	
2514	1626	3	10	
2513	1627	4	11	
2512	1628	5	12	
2511	1629	6	13	
2510	1630	7	14	
2509	1631	1	15	
2508	1632	2	16	
2507	1633	3	17	
2506	1634	4	18	
2505	1635	5	19	
2504	1636	6	20	
2503	1637	7	21	
2502	1638	1	22	
2501	1639	2	23	
2500	1640	3	24	
2499	1641	4	25	
2498	1642	5	26	
2497	1643	6	27	
2496	1644	7	28	
2495	1645	1	29	
2494	1646	2	30	
2493	1647	3	31	
2492	1648	4	32	
2491	1649	5	33	
2490	1650	6	34	
2489	1651	7	35	
2488	1652	1	36	
2487	1653	2	37	
2486	1654	3	38	
2485	1655	4	39	
2484	1656	5	40	
2483	1657	6	41	
2482	1658	7	42	
2481	1659	1	43	
2480	1660	2	44	
2479	1661	3	45	
2478	1662	4	46	
2477	1663	5	47	
2476	1664	6	48	
2475	1665	7	49	
2474	1666	1	1/50	
2473	1667	2	2	
2472	1668	3	3	
2471	1669	4	4	
2470	1670	5	5	
2469	1671	6	6	
2468	1672	7	7	
2467	1673	1	8	
2466	1674	2	9	
2465	1675	3	10	
2464	1676	4	11	
2463	1677	5	12	
2462	1678	6	13	
2461	1679	7	14	
2460	1680	1	15	
2459	1681	2	16	
2458	1682	3	17	
2457	1683	4	18	
2456	1684	5	19	
2455	1685	6	20	
2454	1686	7	21	
2453	1687	1	22	
2452	1688	2	23	
2451	1689	3	24	
2450	1690	4	25	
2449	1691	5	26	
2448	1692	6	27	
2447	1693	7	28	
2446	1694	1	29	
2445	1695	2	30	
2444	1696	3	31	
2443	1697	4	32	
2442	1698	5	33	
2441	1699	6	34	
2440	1700	7	35	
2439	1701	1	36	
2438	1702	2	37	
2437	1703	3	38	
2436	1704	4	39	
2435	1705	5	40	
2434	1706	6	41	
2433	1707	7	42	
2432	1708	1	43	
2431	1709	2	44	
2430	1710	3	45	
2429	1711	4	46	
2428	1712	5	47	
2427	1713	6	48	
2426	1714	7	49	
2425	1715	1	1/50	
2424	1716	2	2	
2423	1717	3	3	
2422	1718	4	4	
2421	1719	5	5	
2420	1720	6	6	
2419	1721	7	7	
2418	1722	1	8	
2417	1723	2	9	
2416	1724	3	10	
2415	1725	4	11	
2414	1726	5	12	
2413	1727	6	13	
2412	1728	7	14	
2411	1729	1	15	
2410	1730	2	16	
2409	1731	3	17	
2408	1732	4	18	
2407	1733	5	19	
2406	1734	6	20	
2405	1735	7	21	
2404	1736	1	22	
2403	1737	2	23	
2402	1738	3	24	
2401	1739	4	25	
2400	1740	5	26	
2399	1741	6	27	
2398	1742	7	28	
2397	1743	1	29	
2396	1744	2	30	
2395	1745	3	31	
2394	1746	4	32	
2393	1747	5	33	
2392	1748	6	34	
2391	1749	7	35	
2390	1750	1	36	
2389	1751	2	37	
2388	1752	3	38	
2387	1753	4	39	
2386	1754	5	40	
2385	1755	6	41	
2384	1756	7	42	
2383	1757	1	43	
2382	1758	2	44	
2381	1759	3	45	
2380	1760	4	46	
2379	1761	5	47	
2378	1762	6	48	
2377	1763	7	49	
2376	1764	1	1/50	
2375	1765	2	2	
2374	1766	3	3	
2373	1767	4	4	
2372	1768	5	5	
2371	1769	6	6	
2370	1770	7	7	
2369	1771	1	8	
2368	1772	2	9	
2367	1773	3	10	
2366	1774	4	11	
2365	1775	5	12	
2364	1776	6	13	
2363	1777	7	14	
2362	1778	1	15	
2361	1779	2	16	
2360	1780	3	17	
2359	1781	4	18	
2358	1782	5	19	
2357	1783	6	20	
2356	1784	7	21	
2355	1785	1	22	
2354	1786	2	23	
2353	1787	3	24	
2352	1788	4	25	
2351	1789	5	26	
2350	1790	6	27	
2349	1791	7	28	
2348	1792	1	29	
2347	1793	2	30	
2346	1794	3	31	
2345	1795	4	32	
2344	1796	5	33	
2343	1797	6	34	
2342	1798	7	35	
2341	1799	1	36	
2340	1800	2	37	
2339	1801	3	38	
2338	1802	4	39	
2337	1803	5	40	
2336	1804	6	41	
2335	1805	7	42	
2334	1806	1	43	
2333	1807	2	44	
2332	1808	3	45	
2331	1809	4	46	
2330	1810	5	47	
2329	1811	6	48	
2328	1812	7	49	
2327	1813	1	1/50	
2326	1814	2	2	
2325	1815	3	3	
2324	1816	4	4	
2323	1817	5	5	
2322	1818	6	6	
2321	1819	7	7	
2320	1820	1	8	
2319	1821	2	9	
2318	1822	3	10	
2317	1823	4	11	
2316	1824	5	12	
2315	1825	6	13	
2314	1826	7	14	
2313	1827	1	15	
2312	1828	2	16	
2311	1829	3	17	
2310	1830	4	18	
2309	1831	5	19	
2308	1832	6	20	
2307	1833	7	21	
2306	1834	1	22	
2305	1835	2	23	
2304	1836	3	24	
2303	1837	4	25	
2302	1838	5	26	
2301	1839	6	27	
2300	1840	7	28	
2299	1841	1	29	
2298	1842	2	30	
2297	1843	3	31	
2296	1844	4	32	
2295	1845	5	33	
2294	1846	6	34	
2293	1847	7	35	
2292	1848	1	36	
2291	1849	2	37	
2290	1850	3	38	
2289	1851	4	39	
2288	1852	5	40	
2287	1853	6	41	
2286	1854	7	42	
2285	1855	1	43	
2284	1856	2	44	
2283	1857	3	45	
2282	1858	4	46	
2281	1859	5	47	
2280	1860	6	48	
2279	1861	7	49	
2278	1862	1	1/50	
2277	1863	2	2	
2276	1864	3	3	
2275	1865	4	4	
2274	1866	5	5	
2273	1867	6	6	
2272	1868	7	7	
2271	1869	1	8	
2270	1870	2	9	
2269	1871	3	10	
2268	1872	4	11	
2267	1873	5	12	
2266	1874	6	13	
2265	1875	7	14	
2264	1876	1	15	
2263	1877	2	16	
2262	1878	3	17	
2261	1879	4	18	
2260	1880	5	19	
2259	1881	6	20	
2258	1882	7	21	
2257	1883	1	22	
2256	1884	2	23	
2255	1885	3	24	
2254	1886	4	25	
2253	1887	5	26	
2252	1888	6	27	
2251	1889	7	28	
2250	1890	1	29	
2249	1891	2	30	
2248	1892	3	31	
2247	1893	4	32	
2246	1894	5	33	
2245	1895	6	34	
2244	1896	7	35	
2243	1897	1	36	
2242	1898	2	37	
2241	1899	3	38	
2240	1900	4	39	
2239	1901	5	40	
2238	1902	6	41	
2237	1903	7	42	
2236	1904	1	43	
2235	1905	2	44	
2234	1906	3	45	
2233	1907	4	46	
2232	1908	5	47	
2231	1909	6	48	
2230	1910	7	49	
2229	1911	1	1/50	
2228	1912	2	2	
2227	1913	3	3	
2226	1914	4	4	
2225	1915	5	5	
2224	1916	6	6	
2223	1917	7	7	
2222	1918	1	8	
2221	1919	2	9	
2220	1920	3	10	
2219	1921	4	11	
2218	1922	5	12	
2217	1923	6	13	
2216	1924	7	14	
2215	1925	1	15	
2214	1926	2	16	
2213	1927	3	17	
2212	1928	4	18	
2211	1929	5	19	
2210	1930	6	20	
2209	1931	7	21	
2208	1932	1	22	
2207	1933	2	23	
2206	1934	3	24	
2205	1935	4	25	
2204	1936	5	26	
2203	1937	6	27	
2202	1938	7	28	
2201	1939	1	29	
2200	1940	2	30	
2199	1941	3	31	
2198	1942	4	32	
2197	1943	5	33	
2196	1944	6	34	
2195	1945	7	35	
2194	1946	1	36	
2193	1947	2	37	
2192	1948	3	38	
2191	1949	4	39	
2190	1950	5	40	
2189	1951	6	41	
2188	1952	7	42	
2187	1953	1	43	
2186	1954	2	44	
2185	1955	3	45	
2184	1956	4	46	
2183	1957	5	47	
2182	1958	6	48	
2181	1959	7	49	
2180	1960	1	1/50	
2179	1961	2	2	
2178	1962	3	3	
2177	1963	4	4	
2176	1964	5	5	
2175	1965	6	6	
2174	1966	7	7	
2173	1967	1	8	
2172	1968	2	9	
2171	1969	3	10	
2170	1970	4	11	
2169	1971	5	12	
2168	1972	6	13	
2167	1973	7	14	
2166	1974	1	15	
2165	1975	2	16	
2164	1976	3	17	
2163	1977	4	18	
2162	1978	5	19	
2161	1979	6	20	
2160	1980	7	21	
2159	1981	1	22	
2158	1982	2	23	
2157	1983	3	24	
2156	1984	4	25	
2155	1985	5	26	
2154	1986	6	27	
2153	1987	7	28	
2152	1988	1	29	
2151	1989	2	30	
2150	1990	3	31	
2149	1991	4	32	
2148	1992	5	33	
2147	1993	6	34	
2146	1994	7	35	
2145	1995	1	36	
2144	1996	2	37	
2143	1997	3	38	
2142	1998	4	39	
2141	1999	5	40	
2140	2000	6	41	
2139	2001	7	42	
2138	2002	1	43	
2137	2003	2	44	
2136	2004	3	45	
2135	2005	4	46	
2134	2006	5	47	
2133	2007	6	48	
2132	2008	7	49	
2131	2009	1	1/50	
2130	2010	2	2	
2129	2011	3	3	
2128	2012	4	4	
2127	2013	5	5	
2126	2014	6	6	
2125	2015	7	7	
2124	2016	1	8	
2123	2017	2	9	
2122	2018	3	10	
2121	2019	4	11	
2120	2020	5	12	
2119	2021	6	13	
2118	2022	7	14	
2117	2023	1	15	
2116	2024	2	16	
2115	2025	3	17	
2114	2026	4	18	
2113	2027	5	19	
2112	2028	6	20	
2111	2029	7	21	
2110	2030	1	22	
2109	2031	2	23	
2108	2032	3	24	
2107	2033	4	25	
2106	2034	5	26	
2105	2035	6	27	
2104	2036	7	28	
2103	2037	1	29	
2102	2038	2	30	
2101	2039	3	31	
2100	2040	4	32	
2099	2041	5	33	
2098	2042	6	34	
2097	2043	7	35	
2096	2044	1	36	
2095	2045	2	37	
2094	2046	3	38	
2093

A	B	C	D	E
2770	1370	5	47	909 747 682 495 313
2769	1371	6	48	910 748 683 496 314
2768	1372	7	49	911 749 684 497 315
2767	1373	1	1/50	912 750 685 498 316
2766	1374	2	2	913 751 686 499 317
2765	1375	3	3	914 752 687 500 318
2764	1376	4	4	915 753 688 501 319
2763	1377	5	5	916 754 689 502 320
2762	1378	6	6	917 755 690 503 321
2761	1379	7	7	918 756 691 504 322
2760	1380	1	8	919 757 692 505 323
2759	1381	2	9	920 758 693 506 324
2758	1382	3	10	921 759 694 507 325
2757	1383	4	11	922 760 695 508 326
2756	1384	5	12	923 761 696 509 327
2755	1385	6	13	924 762 697 510 328
2754	1386	7	14	925 763 698 511 329
2753	1387	1	15	926 764 699 512 330
2752	1388	2	16	927 765 700 513 331
2751	1389	3	17	928 766 701 514 332
2750	1390	4	18	929 767 702 515 333
2749	1391	5	19	930 768 703 516 334
2748	1392	6	20	931 769 704 517 335
2747	1393	7	21	932 770 705 518 336
2746	1394	1	22	933 771 706 519 337
2745	1395	2	23	934 772 707 520 338
2744	1396	3	24	935 773 708 521 339
2743	1397	4	25	936 774 709 522 340
2742	1398	5	26	937 775 710 523 341
2741	1399	6	27	938 776 711 524 342
2740	1400	7	28	939 777 712 525 343
2739	1401	1	29	940 778 713 526 344
2738	1402	2	30	941 779 714 527 345
2737	1403	3	31	942 780 715 528 346
2736	1404	4	32	943 781 716 529 347
2735	1405	5	33	944 782 717 530 348
2734	1406	6	34	945 783 718 531 349
2733	1407	7	35	946 784 719 532 350
2732	1408	1	36	947 785 720 533 351
2731	1409	2	37	948 786 721 534 352
2730	1410	3	38	949 787 722 535 353
2729	1411	4	39	950 788 723 536 354
2728	1412	5	40	951 789 724 537 355
2727	1413	6	41	952 790 725 538 356
2726	1414	7	42	953 791 726 539 357
2725	1415	1	43	954 792 727 540 358
2724	1416	2	44	955 793 728 541 359
2723	1417	3	45	956 794 729 542 360
2722	1418	4	46	957 795 730 543 361
2721	1419	5	47	958 796 731 544 362
2720	1420	6	48	959 797 732 545 363
2719	1421	7	49	960 798 733 546 364
2718	1422	1	1/50	961 799 734 547 365
2717	1423	2	2	96[illegible] 800 735 548 366
2716	1424	3	3	736 549 367
2715	1425	4	4	737 550 368
2714	1426	5	5	738 551 369
2713	1427	6	6	739 552 370
2712	1428	7	7	740 553 371
2711	1429	1	8	741 554 372
2710	1430	2	9	742 555 373
2709	1431	3	10	743 556 374
2708	1432	4	11	744 557 375
2707	1433	5	12	745 558 376
2706	1434	6	13	746 559 377
2705	1435	7	14	747 560 378
2704	1436	1	15	748 561 379
2703	1437	2	16	749 562 380
2702	1438	3	17	750 563 381
2701	1439	4	18	751 564 382
2700	1440	5	19	752 565 383
2699	1441	6	20	753 566 384
2698	1442	7	21	754 567 385
2697	1443	1	22	755 568 386
2696	1444	2	23	756 569 387
2695	1445	3	24	757 570 388
2694	1446	4	25	758 571 389
2693	1447	5	26	759 572 390
2692	1448	6	27	760 573 391
2691	1449	7	28	761 574 392
2690	1450	1	29	762 575 393
2689	1451	2	30	763 576 394

Gen 5:19-20

Jared died

Scroll Legend

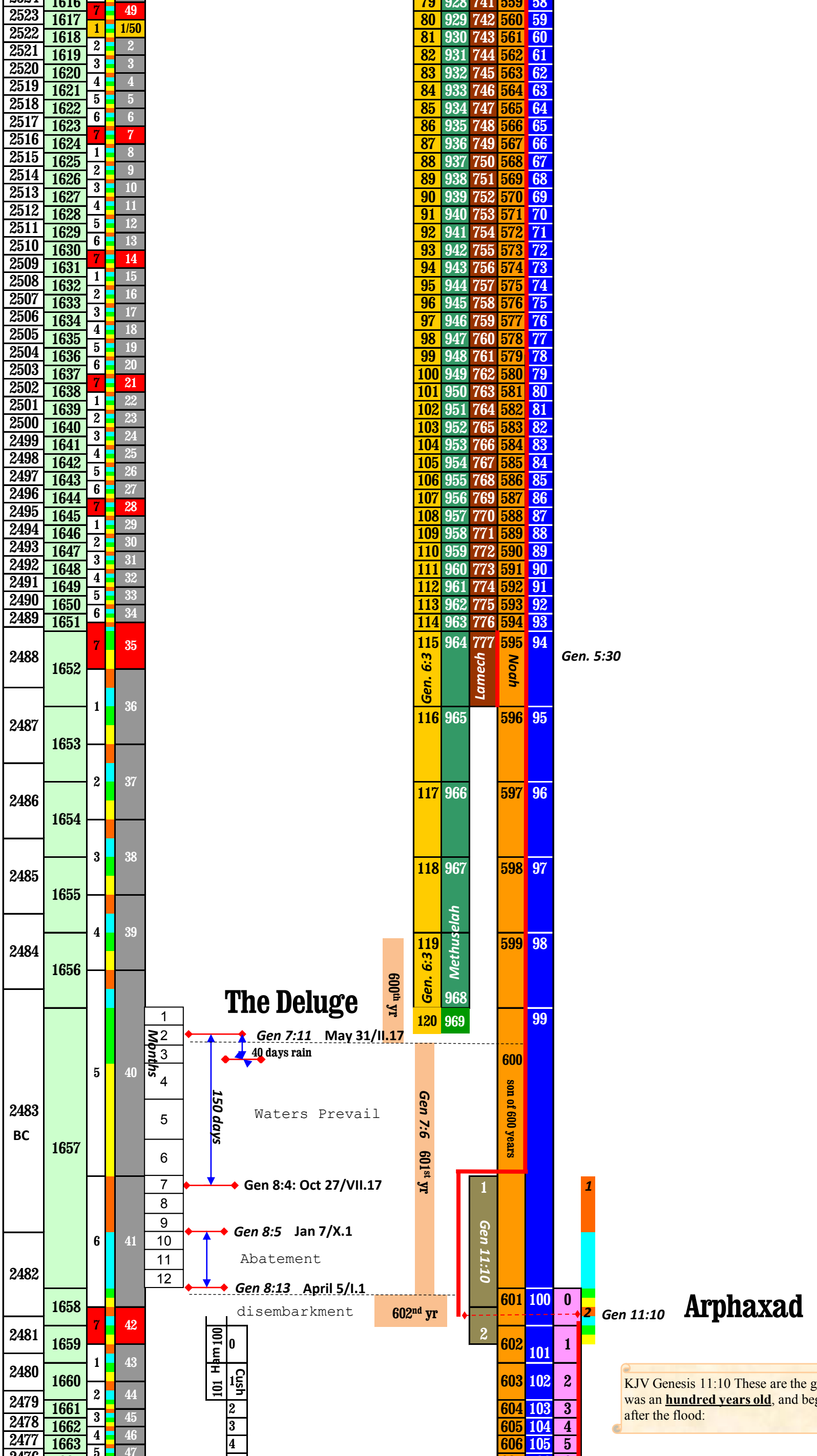
A	B.C. Years	E	Sabbath Year
B	Year of World	E	Jubilee Year
C	Sabbatic Periods	K2	Methuselah's Life
C	Sabbath Year	K4	Lamech's Life
D	Seasons	L2	Noah's Life
E	Sabbatic Periods		

| | | |

120 Years

Gen. 6:3

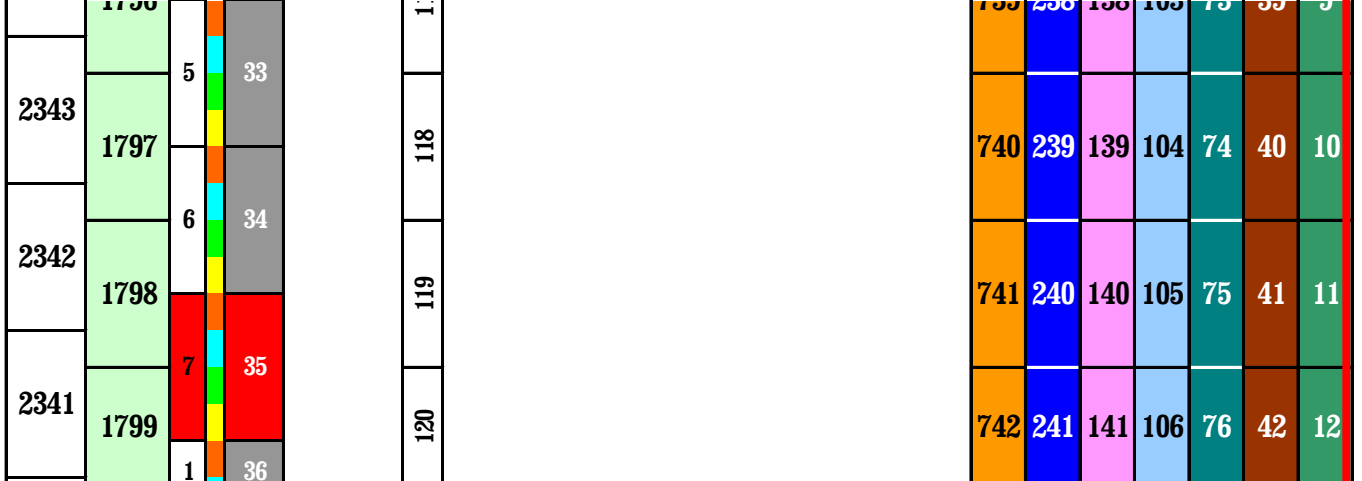
A	B	C	D	E	K2	L2	L4
2606	1534	1	16	846	659	477	
2605	1535	2	17	847	660	478	
2604	1536	3	18	848	661	479	
2603	1537	4	19	0	849	662	480
2602	1538	5	20	1	850	663	481
2601	1539	6	21	2	851	664	482
2600	1540	7	22	3	852	665	483
2599	1541	1	23	4	853	666	484
2598	1542	2	24	5	854	667	485
2597	1543	3	25	6	855	668	486
2596	1544	4	26	7	856	669	487
2595	1545	5	27	8	857	670	488
2594	1546	6	28	9	858	671	489
2593	1547	7	29	10	859	672	490
2592	1548	1	30	11	860	673	491
2591	1549	2	31	12	861	674	492
2590	1550	3	32	13	862	675	493
2589	1551	4	33	14	863	676	494
2588	1552	5	34	15	864	677	495
2587	1553	6	35	16	865	678	496
2586	1554	7	36	17	866	679	497
2585	1555	1	37	18	867	680	498
2584	1556	2	38	19	868	681	499
2583	1557	3	39	20	869	682	500
2582	1558	4	40	21	870	683	501
2581	1559	5	41	22	871	684	502
2580	1560	6	42	23	872	685	503
2579	1561	7	43	24	873	686	504
2578	1562	1	44	25	874	687	505
2577	1563	2	45	26	875	688	506
2576	1564	3	46	27	876	689	507
2575	1565	4	47	28	877	690	508
2574	1566	5	48	29	878	691	509
2573	1567	6	49	30	879	692	510
2572	1568	7	1/50	31	880	693	511
2571	1569	1	2	32	881	694	512
2570	1570	2	3	33	882	695	513
2569	1571	3	4	34	883	696	514
2568	1572	4	5	35	884	697	515
2567	1573	5	6	36	885	698	516
2566	1574	6	7	37	886	699	517
2565	1575	7	8	38	887	700	518
2564	1576	1	9	39	888	701	519
2563	1577	2	10	40	889	702	520
2562	1578	3	11	41	890	703	521
2561	1579	4	12	42	891	704	522
2560	1580	5	13	43	892	705	523
2559	1581	6	14	44	893	706	524
2558	1582	7	15	45	894	707	525
2557	1583	1	16	46	895	708	526
2556	1584	2	17	47	896	709	527
2555	1585	3	18	48	897	710	528
2554	1586	4	19	49	898	711	529
2553	1587	5	20	50	899	712	530
2552	1588	6	21	51	900	713	531
2551	1589	7	22	52	901	714	532
2550	1590	1	23	53	902	715	533
2549	1591	2	24	54	903	716	534
2548	1592	3	25	55	904	717	535
2547	1593	4	26	56	905	718	536
2546	1594	5	27	57	906	719	537
2545	1595	6	28	58	907	720	538
2544	1596	7	29	59	908	721	539
2543	1597	1	30	60	909	722	540
2542	1598	2	31	61	910	723	541
2541	1599	3	32	62	911	724	542
2540	1600	4	33	63	912	725	543
2539	1601	5	34	64	913	726	544
2538	1602	6	35	65	914	727	545
2537	1603	7	36	66	915	728	546
2536	1604	1	37	67	916	729	547
2535	1605	2	38	68	917	730	548
2534	1606	3	39	69	918	731	549
2533	1607	4	40	70	919	732	550
2532	1608	5	41	71	920	733	551
2531	1609	6	42	72	921	734	552
2530	1610	7	43	73	922	735	553
2529	1611	1	44	74	923	736	554
2528	1612	2	45	75	924	737	555
2527	1613	3	46	76	925	738	556
2526	1614	4	47	77	926	739	557
2525	1615	5	48	78	927	740	558
2524	1616	6	49	79	928	741	559
2523	1617	7	50	80	929	742	560
2522	1618	1	51	81	930	743	561
2521	1619	2	52	82	931	744	562
2520	1620	3	53	83	932	745	563
2519	1621	4	54	84	933	746	564
2518	1622	5	55	85	934	747	565
2517	1623	6	56	86	935	748	566
2516	1624	7	57	87	936	749	567
2515	1625	1	58	88	937	750	568
2514	1626	2	59	89	938	751	569
2513	1627	3	60	90	939	752	570
2512	1628	4	61	91	940	753	571
2511	1629	5	62	92	941	754	572
2510	1630	6	63	93	942	755	573
2509	1631	7	64	94	943	756	574
2508	1632	1	65	95	944	757	575
2507	1633	2	66	96	945	758	576
2506	1634	3	67	97	946	759	577
2505	1635	4	68	98	947	760	578
2504	1636	5	69	99	948	761	579
2503	1637	6	70	100	949	762	580
2502	1638	7	71	101	950	763	581
2501	1639	1	72	102	951	764	582
2500	1640	2	73	103	952	765	583
2499	1641	3	74	104	953	766	584
2498	1642	4	75	105	954	767	585
2497	1643	5	76	106	955	768	586
2496	1644	6	77	107	956	769	587
2495	1645	7	78	108	957	770	588
2494	1646	1	79	109	958	771	589
2493	1647	2	80	110	959	772	590
2492	1648	3	81	111	960	773	591
2491	1649	4	82	112	961	774	592
2490	1650	5	83	113	962	775	593
2489	1651	6	84	114	963	776	594
2488	1652	7	85	115	964	777	595
2487	1653	1	86	116	965	778	596
2486	1654	2	87	117	966	779	597
2485	1655	3	88	118	967	780	598
2484	1656	4	89	119	968	781	599
2483	1657	5	90	120	969	782	600
2482	1658	6	91	121	970	783	601
2481	1659	7	92	122	971	784	602
2480	1660	1	93	123	972	785	603
2479	1661	2	94	124	973	786	604
2478	1662	3	95	125	974	787	605
2477	1663	4	96	126	975	788	606
2476	1664	5	97	127	976	789	607
2475	1665	6	98	128	977	790	608
2474	1666	7	99	129	978	791	609
2473	1667	1	100	130	979	792	610
2472	1668	2	101	131	980	793	611
2471	1669	3	102	132	981	794	612
2470	1670	4	103	133	982	795	613
2469	1671	5	104	134	983	796	614
2468	1672	6	105	135	984	797	615
2467	1673	7	106	136	985	798	616
2466	1674	1	107	137	986	799	617
2465	1675	2	108	138	987	800	618
2464	1676	3	109	139	988	801	619
2463	1677	4	110	140	989	802	620
2462	1678	5	111	141	990	803	621
2461	1679	6	112	142	991	804	622
2460	1680	7	113	143	992	805	623
2459	1681	1	114	144	993	806	624
2458	1682	2	115	145	994	807	625
2457	1683	3	116	146	995	808	626
2456	1684	4	117	147	996	809	627
2455	1685	5	118	148	997	810	628
2454	1686	6	119	149	998	811	629
2453	1687	7	120	150	999	812	630
2452	1688	1	121	151	1000	813	631
2451	1689	2	122	152	1001	814	632
2450	1690	3	123	153	1002	815	633
2449	1691	4	124	154	1003	816	634
2448	1692	5	125	155	1004	817	635
2447	1693	6	126	156	1005	818	636
2446	1694	7	127	157	1006	819	637
2445	1695	1	128	158	1007	820	638
2444	1696	2	129	159	1008	821	639
2443	1697	3	130	160	1009	822	640
2442	1698	4	131	161	1010	823	641
2441	1699	5	132	162	1011	824	642
2440	1700	6	133	163	1012	825	643
2439	1701	7	134	164	1013	826	644
2438	1702	1	135	165	1014	827	645
2437	1703	2	136	166	1015	828	646
2436	1704	3	137	167	1016	829	647
2435	1705	4	138	168	1017	830	648
2434	1706	5	139	169	1018	831	649
2433	1707	6	140	170	1019	832	650
2432	1708	7	141	171	1020	833	651
2431	1709	1	142	172	1021	834	652
2430	1710	2	143	173	1022	835	653
2429	1711	3	144	174	1023	836	654
2428	1712	4	145	175	1024	837	655
2427	1713	5	146	176	1025	838	656
2426	1714	6	147	177	1026	839	657
2425	1715	7	148	178	1027	840	658
2424	1716	1	149	179	1028	841	659
2423	1717	2	150	180	1029	842	660
2422	1718	3	151	181	1030	843	661
2421	1719	4	152	182	1031	844	662
2420	1720	5	153	183	1032	845	663
2419	1721	6	154	184	1033	846	664
2418	1722	7	155	185	1034	847	665
2417	1723	1	156	186	1035	848	666
2416	1724	2	157	187	1036	849	667
2415	1725	3	158	188	1037	850	668
2414	1726	4	159	189	1038	851	669
2413	1727	5	160	190	1039	852	670
2412	1728	6	161	191	1040	853	671
2411	1729	7	162	192	1041	854	672
2410	1730	1	163	193	1042	855	673
2409	1731	2	164	194	1043	856	674
2408	1732	3	165	195	1044	857	675
2407	1733	4	166	196	1045	858	676
2406	1734	5	167	197	1046	859	677
2405	1735	6	168	198	1047	860	678
2404	1736	7	169	199	1048	861	679
2403	1737	1	170	200	1049	862	680
2402	1738	2	171	201	1050	863	681
2401	1739	3	172	202	1051	864	682
2400	1740	4	173	203	1052	865	683
2399	1741	5	174	204	1053	866	684
2398	1742	6	175	205	1054	867	685
2397	1743	7	176	206	1055	868	686
2396	1744	1	177	207	1056	869	687
2395	1745	2	178	208	1057	870	688
2394	1746	3	179	209	1058	871	689
2393	1747	4	180	210	1059	872	690
2392	1748	5	181	211	1060	873	691
2391	1749	6	182	212	1061	874	692
2390	1750	7	183	213	1062	875	693
2389	1751	1	184	214	1063	876	694
2388	1752	2	185	215	1064	877	695
2387	1753	3	186	216	1065	878	696
2386	1754	4	187	217	1066	879	697
2385	1755	5	188	218	1067	880	698
2384	1756	6	189	219	1068	881	699
2383	1757	7	190	220	1069	882	700
2382	1758	1	191	221	1070	883	701
2381	1759	2	192	222	1071	884	702
2380	1760	3	193	223	1072	885	703
2379	1761	4	194	224	1073	886	704
2378	1762	5	195	225	1074	887	705
2377	1763	6	196	226	1075	888	706
2376	1764	7	197	227	1076	889	707
2375	1765	1	198	228	1077	890	708
2374	1766	2	199	229	1078	891	709
2373	1767	3	200	230	1079	892	710
2372	1768	4	201	231	1080	893	711
2371	1769	5	202	232	1081	894	712
2370	1770	6	203	233	1082	895	713
2369	1771	7	204	234	1083	896	714
2368	1772	1	205	235	1084	897	715
2367	1773	2	206	236	1085	898	716
2366	1774	3	207	237	1086	899	717
2365	1775	4	208	238	1087	900	718
2364	1776	5	209	239	1088	901	719
2363	1777	6	210	240	1089	902	720
2362	1778	7	211	241	1090	903	721
2361	1779	1	212	242	1091	904	722
2360	1780	2	213	243	1092	905	723
2359	1781	3	214	244	1093	906	724
2358	1782	4	215	245	1094	907	725
2357	1783	5	216	246	1095	908	726
2356	1784	6	217	247	1096	909	727
2355	1785	7	218	248	1097	910	728
2354	1786	1	219	249	1098	911	729
2353	1787	2	220	250	1099	912	730
2352	1788	3	221	251	1100	913	731
2351	1789	4	222	252	1101	914	732
2350	1790	5	223	253	1102	915	733
2349	1791	6	224	254	1103	916	734
2348	1792	7	225	255	1104	917	735
2347	1793	1	226	256	1105	918	736
2346	1794	2	227	257	1106	919	737
2345	1795	3	228	258	1107	920	738
2344	1796	4	229	259	1108	921	739
2343	1797	5	230	260	1109	922	740
2342	1798	6	231	261	1110	923	741
2341	1799	7	232	262	1111	924	742
2340	1800	1	233	263	1112	925	743
2339	1801	2	234	264	1113	926	744
2338	1802	3	235	265	1114	927	745
2337	1803	4	236	266	1115	928	746
2336	1804	5	237	267	1116	929	747
2335	1805	6	238	268	1117	930	748
2334	1806	7	239	269	1118	931	749
2333	1807	1	240	270	1119	932	750
2332	1808	2	241	271	1120	933	751
2331	1809	3	242	272	1121	934	752
2330	1810	4	243	273	1122	935	753
2329	1811	5	244	274	1123	936	754
2328	1812	6	245	275	1124	937	755
2327	1813	7	246	276	1125	938	756
2326	1814	1	247	277	1126	939	757
2325	1815	2	248	278	1127	940	758
2324	1816	3	249	279	1128	941	759
2323	1817	4	250	280	1129	942	760
2322	1818	5	251	281	1130	943	761
2321	1819	6	252	282	1131	944	762
2320	1820	7	253	283	1132	945	763
2319	1821	1	254	284	1133	946	764
2318	1822	2	255	285	1134	947	765
2317	1823	3	256	286	1135	948	766
2316	1824	4	257	287	1136	949	767
2315	1825	5	258	288	1137	950	768
2314	1826	6	259	289	1138	951	769
2313	1827	7	260	290	1139	952	770
2312	1828	1	261	291	1140	953	771
2311	1829	2	262	292	1141	954	772
2310	1830	3	263	293	1142	955	773
2309	1831	4	264	294	1143	956	774
2308	1832	5	265	295	1144	957	775
2307	1833	6	266	296	1145	958	776
2306	1834	7	267	297	1146	959	777
2305	1835	1	268	298	1147	960	778
2304	1836	2	269	299	1148	961	779
2303	1837	3	270	300	1149	962	780
2302	1838	4	271	301	1150	963	781
2301	1839	5	272	302	1151	964	782
2300	1840	6	273	303	1152	965	783
2299	1841	7	274	304	1153	966	784
2298	1842	1	275	305	1154	967	785
2297	1843	2	276	306	1155	968	786
2296	1844	3	277	307	1156	969	787
2295	1845	4	278	308	1157	970	788
2294	1846	5	279	309	1158	971	789
2293	1847	6	280	310	1159	972	790
2292	1848	7	281	311	1160	973	791
2291	1849	1	282	312	1161	974	792
2290	1850	2	283	313	1162	975	793
2289	1851	3	284	314	1163	976	794
2288	1852	4	285	315	1164	977	795
2287	1853	5	286	316	1165	978	796
2286	1854	6	287	317	1166	979	797
2285	1855	7	288	318	1167	980	798
2284	1856	1	289	319	1168	981	799
2283	1857	2	290	320	1169	982	800
2282	1858	3	291	321	1170	983	801
2281	1859	4	292	322	1171	984	802
2280	1860	5	293	323	1172	985	803
2279	1861	6	294	324	1173	986	804
2278	1862	7	295	325	1174	987	805
2277	1863	1	296	326	1175	988	806
2276	1864	2	297	327	1176	989	807
2275	1865	3	298	328	1177	990	808
2274	1866	4	299	329	1178	991	809
2273	1867	5	300	330	1179	992	810
2272	1868	6	301	331	1180	993	811
2271	1869	7	302	332	1181	994	812
2270	1870	1	303	333	1182	995	813
2269	1871	2	304	334	1183	996	814
2268	1872	3	305	335	1184	997	815
2267	1873	4	306	336	1185	998	816
2266	1874	5	307	337	1186	999	817
2265	1875	6	308	338	1187	1000	818
2264	1876	7	309	339	1188	1001	819
2263	1877	1	310	340	1189	1002	820
2262	1878	2	311	341	1190	1003	821
2261	1879	3	312	342	1191	1004	822
2260	1880	4	313	343	1192	1005	823
2259	1881	5	314	344	1193	1006	824
2258	1882	6	315	345	1194	1007	825
2257	1883	7	316	346	1195	1008	826
2256	1884	1	317	347	1196	1009	827
2255	1885	2	318	348	1197	1010	828
2254	1886	3	319	349	1198	1011	829
2253	1887	4	320	350	1199	1012	830
2252	1888	5	321	351	1200	1013	831
2251	1889	6	322	352	1201	1014	832
2250	1890	7	323	353	1202	1015	833
2249	1891	1	324	354	1203	1016	834
2248	1892	2	325	355	1204	1017	835
2247	1893	3	326	356	1205	1018	836
2246	1894	4	327	357	1206	1019	837
2245	1895	5	328	358	1207	1020	838
2244	1896	6	329	359	1208	1021	839
2243	1897	7	330	360	1209	1022	840
2242	1898	1	331	361	1210	1023	841
2241	1899	2	332	362	1211	1024	842
2240	1900	3	333	363	1212	1025	843
2239	1901	4	334	364	1213	1026	844
2238	1902	5	335	365	1214	1027	845
2237	1903	6	336	366	1215	1028	846
2236	1904	7	337	367	1216	1029	847
2235	1905	1	338	368	1217	1030	848
2234	1906	2	339	369	1218	1031	849
2233	1907	3	340	370	1219	1032	850
2232	1908	4	341	371	1220	1033	851
2231	1909	5	342	372	1221	1034	852
2230	1910	6	343	373	1222	1035	853
2229	1911	7	344	374	1223	1036	854
2228	1912	1	345	375	1224	1037	855
2227	1913	2	346	376	1225	1038	856
2226	1914	3	347	377	1226	1039	857
2225	1915	4	348	378	1227	1040	858
2224	1916	5	349	379	1228	1041	859
2223	1917	6	350	380	1229	1042	860
2222	1918	7	351	381	1230	1043	861
2221	1919	1	352	382	1231	1044	862
2220	1920	2	353	383	1232	1045	863
2219	1921	3	354	384	1233	1046	864
2218	1922	4	355	385	1234	1047	865
2217	1923	5	356	386	1235	1048	866
2216	1924	6	357	387	1236	1049	867
2215	1925	7	358	388	1237	1050	868
2214	1926	1	359	389	1238	1051	869
2213	1927	2	360	390	1239	1052	870
2212	1928	3	361	391	1240	1053	871
2211	1929	4	362	392	1241	1054	872
2210	1930	5	363	393	1242	1055	873
2209	1931	6	364	394	1243	1056	874
2208	1932	7	365	395	1244	1057	875
2207	1933	1	366	396	1245	1058	876
2206	1934	2	367	397	1246	1059	877
2205	1935	3	368	398	1247	1060	878
2204	1936	4	369	399	1248	1061	879
2203	1937	5	370	400	1249	1062	880
2202	1938	6	371	401	1250	1063	881
2201	1939	7	372	402	1251	1064	882
2200	1940	1	373	403	1252	1065	883
2199	1941	2	374	404	1253	1066	884
2198	1942	3	375	405	1254	1067	885
2197	1943	4	376	406	1255	1068	886
2196	1944	5	377	407	1256	1069	887
2195	1945	6	378	408	1257	1070	888
2194	1946	7	379	409	1258	1071	889
2193	1947	1	380	410	1259	1072	890
2192	1948	2	381	411	1260	1073	891
2191	1949	3	382	412	1261	1074	892
2190	1950	4	383	413	1262	1075	893
2189	1951	5	384	414	1263	1076	894
2188	1952	6	385	415	1264	1077	895
2187	1953	7	386	416	1265	1078	896
2186	1954	1	387	417	1266	1079	897
2185	1955	2	388	418	1267	1080	898
2184	1956	3	389	419	1268	1081	899
2183	1957	4	390	420	1269	1082	900
2182	1958	5	391	421	1270	1083	901
2181	1959	6	392	422	1271	1084	902
2180	1960	7	393	423	1272	1085	903
2179	1961	1	394	424	1273	1086	904
2178	1962	2	395	425	1274	1087	905
2177	1963	3	396	426	1275	1088	906
2176	1964	4	397	427	1276	1089	907
2175	1965	5	398	428	1277	1090	908
2174	1966	6	399	429	1278



KJV Genesis 11:10 These are the generations of Shem: Shem was an **hundred years old**, and begat **Arphaxad** **two years** after the flood:

| | | |

| | | |


2343
2342
2341
1797
1798
1799
5
6
7
1
33
34
35
36
118
119
120
740
741
742
239
240
241
139
140
141
104
105
106
74
75
76
40
41
42
10
11
12

Eclipse Text

Sargon's invasion of land of Arrat

Gen 11:20

Serug

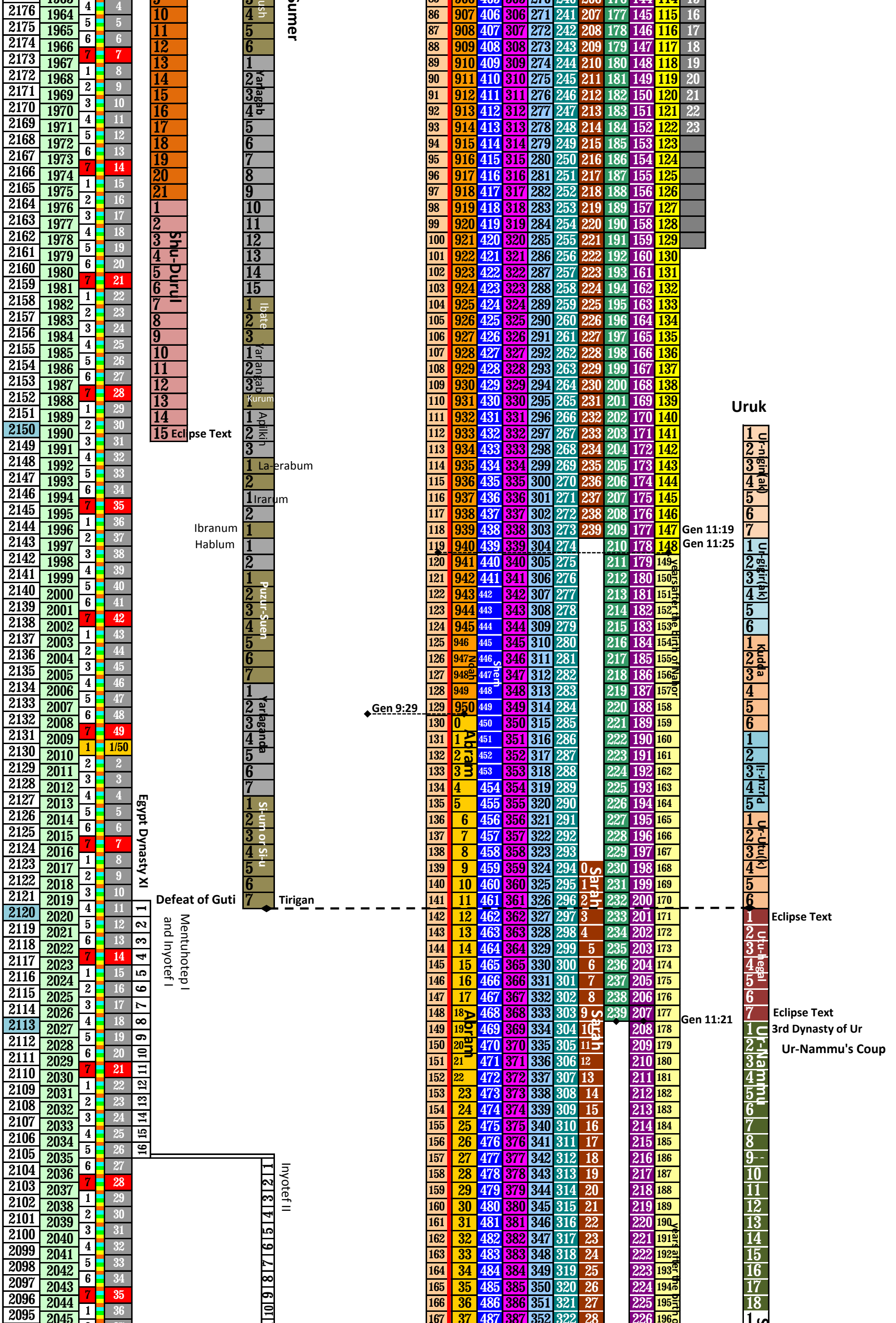
Gen 11:22

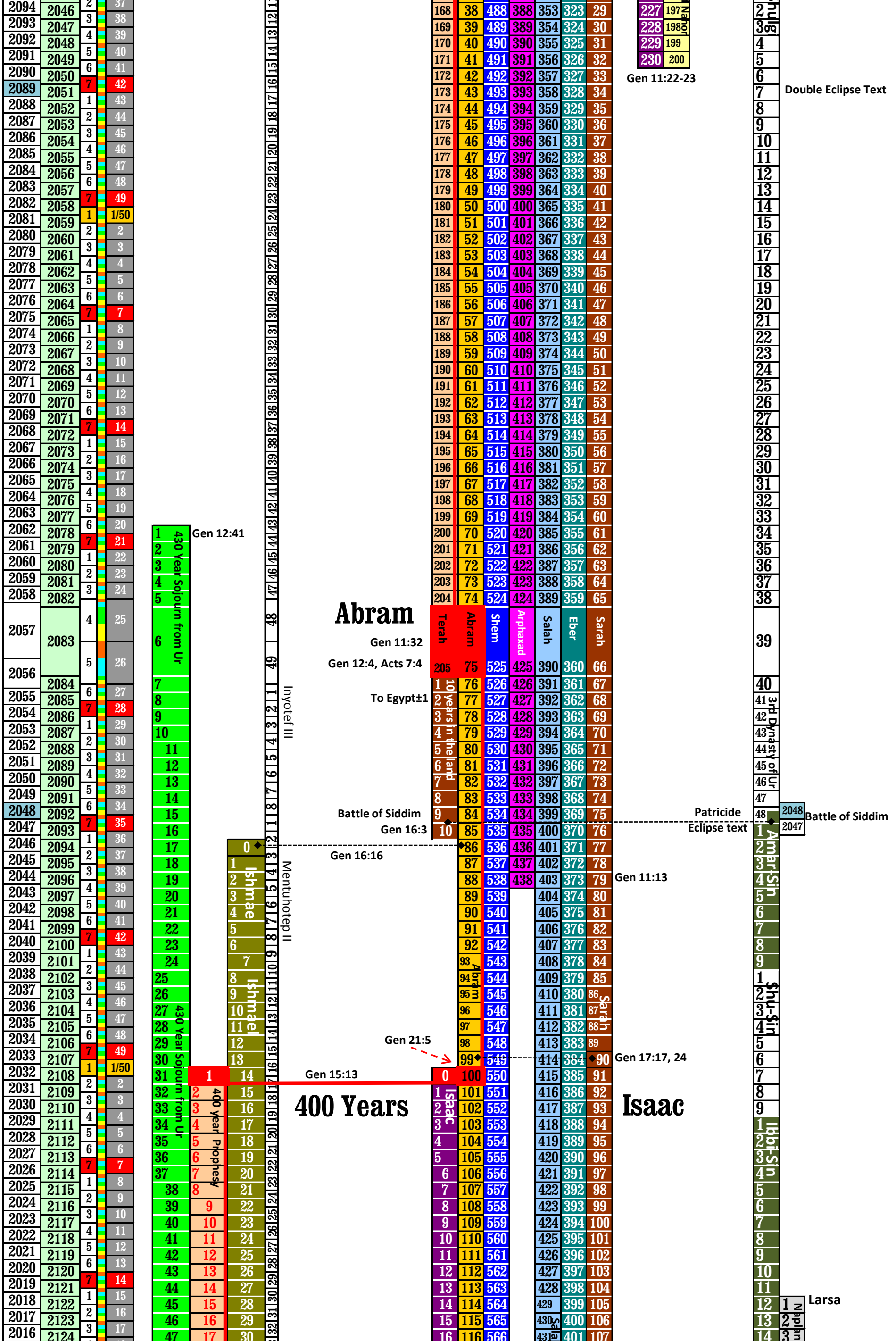
Nahor

Gen 11:24

Terah

| | | |


Shu-Durul
Eclipse Text
Ibranum
Hablum
Egypt Dynasty XI
Defeat of Guti
Mentuhotep I and Inyotef I
Inyotef II
Tirigan
Gen 9:29
Abram
Sarah
Noah
Sherh
Gen 11:19
Gen 11:25
Gen 11:21
Uruk
Eclipse Text
Eclipse Text
3rd Dynasty of Ur
Ur-Nammu's Coup



Abram
Gen 11:32
Gen 12:4, Acts 7:4
To Egypt±1
Terah
Abram
Shem
Arphaxad
Salah
Eber
Sarah
10 years in the land
Battle of Siddim
Gen 16:3
Gen 16:16
Gen 11:13
Gen 21:5
Gen 17:17, 24
Gen 15:13
400 Years
Isaac
Gen 11:22-23
Gen 12:41
430 Year Sojourn from Ur
400 year Prophesy
Inyotef III
Mentuhotep II
Ishmael
Double Eclipse Text
Patricide
Eclipse text
Battle of Siddim
Amar-Sin
Shu-Sin
Ibbi-Sin
Larsa
3rd Dynasty of Ur

Jacob

Gen 25:26

Gen 25:7

Gen 11:17

Gen. 11:11

Gen 11:15

Gen 23:1

Eclipse text

Fall of Ur III

Isin

Assyria

Mentuhotep III

Mentuhotep IV

Amenemhet I

Senwosret I

XII

Jacob

Isaac

Abraham

Shem

Terah

Heber

Peleg

Reu

Serug

Nahor

Terah

Abram

Ishbi-Erra

Iddin-Dagan

Ishme-Dagan

Shu-ilishu

Damiq-ilishu

Ibbi-Suen

Ishbi-Erra

Iddin-Dagan

Erishum

Jacob's Service

Joseph

Amenemhet II

Gen 25:17

Gen 31:41

Gen 30:25

Gen 31:41

Gen 35:18

Gen 37:2

Gen 29:20

Gen 31:41

by Leah

by Bilhah of Rachel

Zilpah of Leah

by Leah

Sesostris II

Sesostris III

lunar date

Sirius rising, Memphis
July 16, 1866
IV Peret 16.

Twenty years

For Rachel

For Leah

For Flocks

Jacob

Joseph

Joseph

Benjamin (estimate)

Reuben

Simeon

Levi

Judah

Dan

Naphtali

Gad

Asher

Isaachar

Zebulun

Dinah

Ikunum

Lipit-Eshtar

Gungunum

Abi-sare

Ur-Ninurta

Sargon I

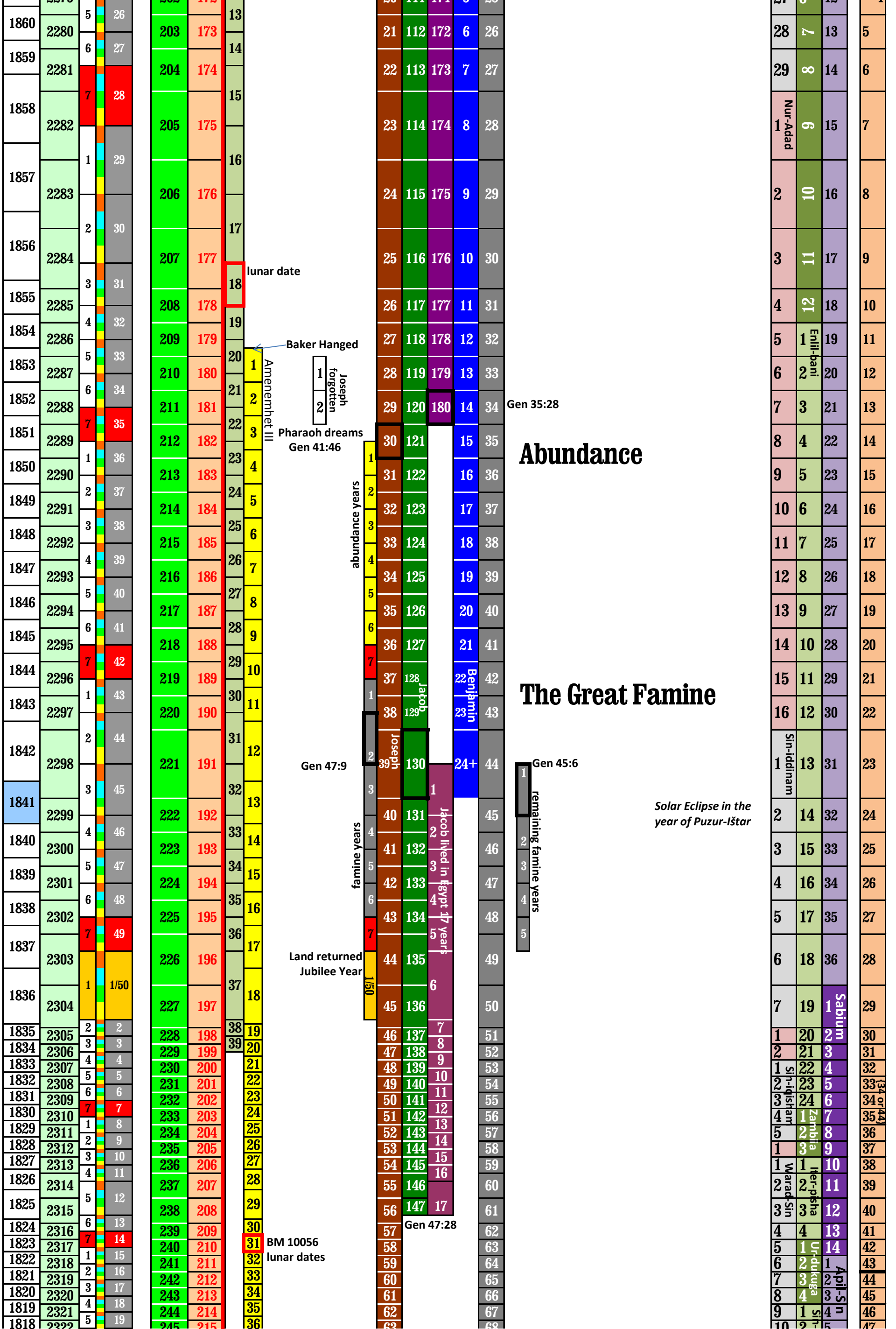
Puzur-Aššur II

Naram-Sîn

Sumu-la-El

Bur-Sin

Sumu-abum



lunar date
Baker Hanged
Amenemhet III
Joseph forgotten
Pharaoh dreams
Gen 41:46
Gen 35:28
Abundance
abundance years
The Great Famine
Jacob
Benjamin
Gen 47:9
Joseph
Gen 45:6
remaining famine years
Solar Eclipse in the year of Puzur-Ištar
famine years
Jacob lived in Egypt 17 years
Land returned Jubilee Year
Gen 47:28
BM 10056 lunar dates
Nur-Adad
Enlil-bani
Sin-iddinam
Sabium
Sin-iqisham
Zambiia
Warad-Sin
Iter-pisha
Ur-dukuga
Apil-Sin

Gen 50:26

Joseph

Exo. 6:16

Levi

Amenemhet IV

Nofrusobek

Rim-Sin of Larsa

Damiq-ilishu

Sin-muballit

Hammurabi at Larsa

Samsu-iluna

Erishum II

Shamshi Adad I

Ishme-Dagan

Hammurabi

Dyna

Moses

Deu. 34:7

Joshua

Caleb

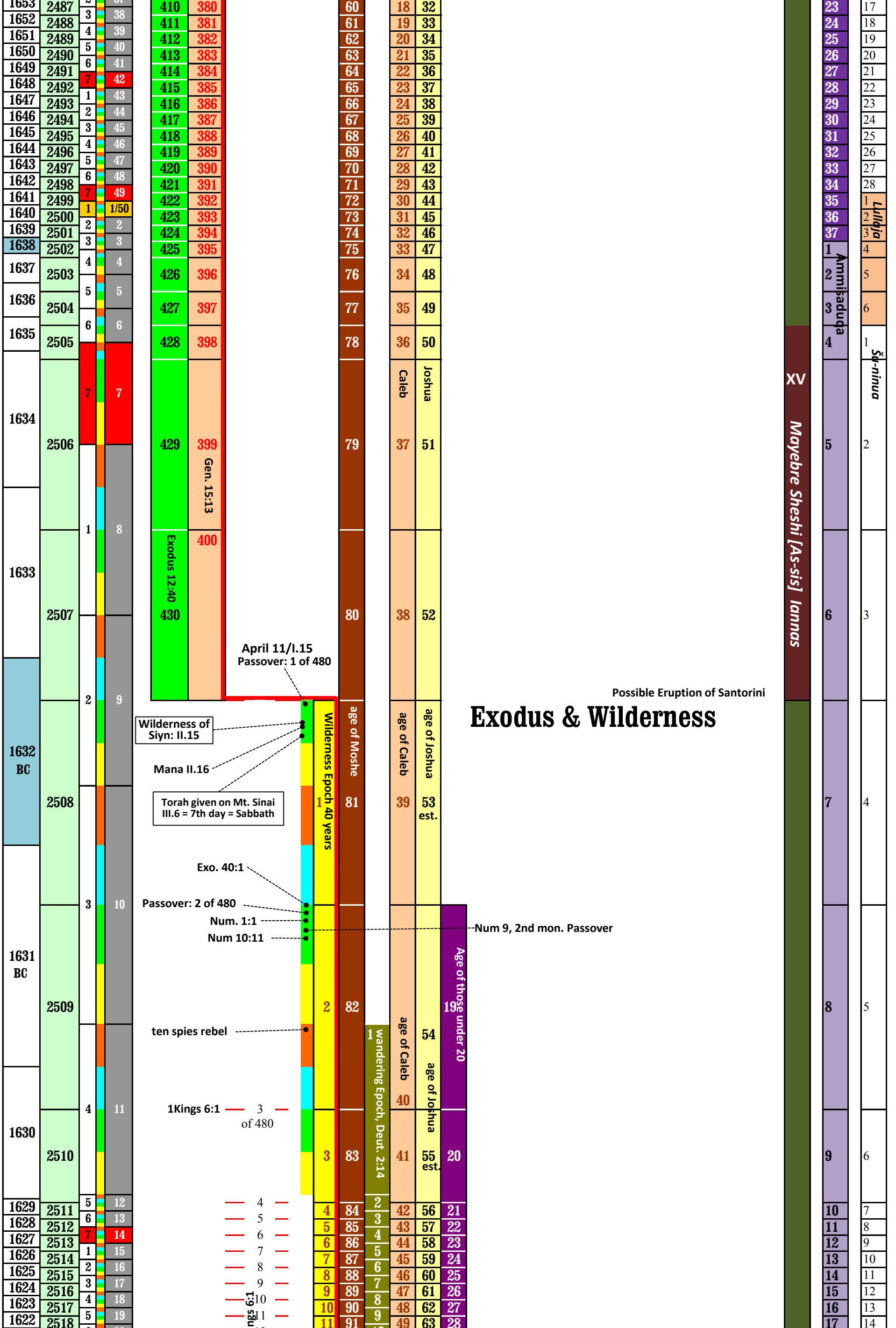
Gen. 15:13

Dynasty XV Hyksos

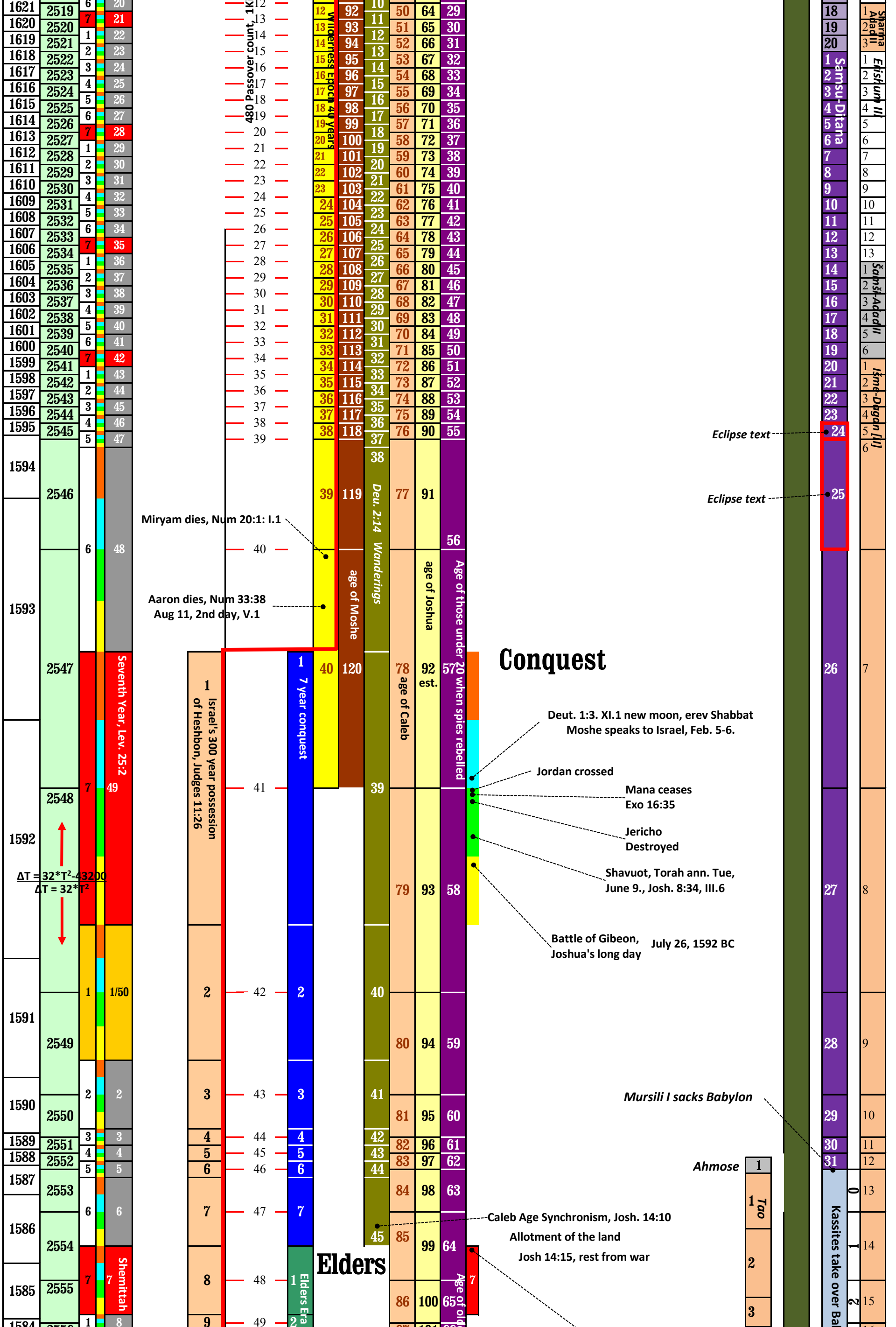
XV

Dynasty XV Hyksos

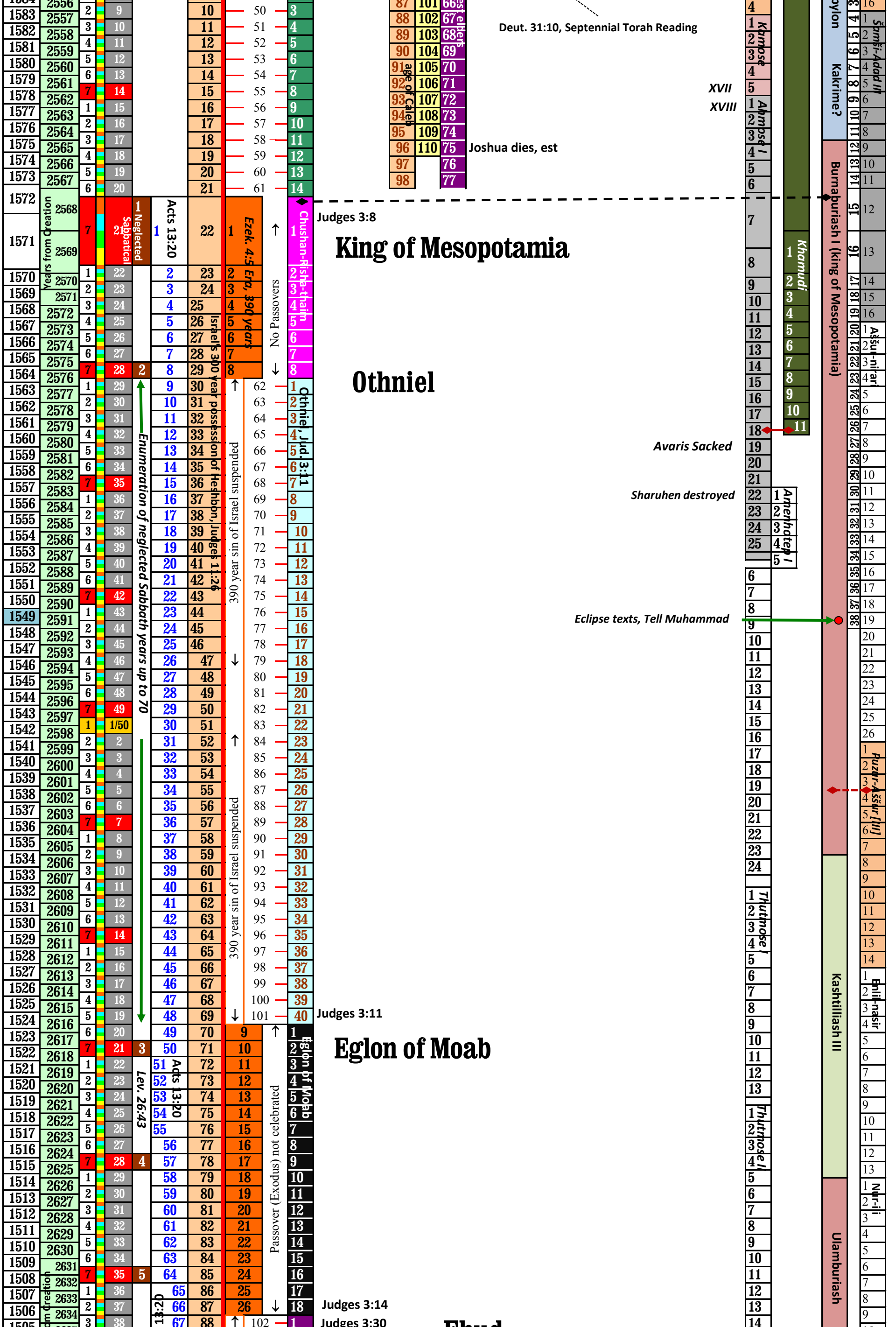
Khyan



Possible Eruption of Santorini
Exodus & Wilderness
April 11/I.15
Passover: 1 of 480
Wilderness of Siyn: II.15
Mana II.16
Torah given on Mt. Sinai III.6 = 7th day = Sabbath
Exo. 40:1
Passover: 2 of 480
Num. 1:1
Num 10:11
Num 9, 2nd mon. Passover
ten spies rebel
1Kings 6:1
3 of 480
Exodus 12:40
Gen. 15:13
Wilderness Epoch 40 years
age of Moshe
age of Caleb
age of Joshua
Caleb
Joshua
wandering Epoch, Deut. 2:14
Age of those under 20
Ammisaduqa
Lullaja
Šu-ninua
XV
Mayebre Sheshi [As-sis] Iannas
1632 BC
1631 BC
1630
1633
1634
1635
1636
1637
1638
1639
1640
1641
1642
1643
1644
1645
1646
1647
1648
1649
1650
1651
1652
1653
1629
1628
1627
1626
1625
1624
1623
1622
2487
2488
2489
2490
2491
2492
2493
2494
2495
2496
2497
2498
2499
2500
2501
2502
2503
2504
2505
2506
2507
2508
2509
2510
2511
2512
2513
2514
2515
2516
2517
2518
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53 est.
54
55 est.
56
57
58
59
60
61
62
63
17
18
19
20
21
22
23
24
25
26
27
28
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28



480 Passover count, 1K
Wilderness Epoch 40 years
Deu. 2:14 Wanderings
age of Moshe
age of Joshua
Age of those under 20 when spies rebelled
age of Caleb
est.
Miryam dies, Num 20:1: I.1
Aaron dies, Num 33:38
Aug 11, 2nd day, V.1
Seventh Year, Lev. 25:2
Israel's 300 year possession of Heshbon, Judges 11:26
7 year conquest
Elders Era
Elders
Conquest
Deut. 1:3. XI.1 new moon, erev Shabbat
Moshe speaks to Israel, Feb. 5-6.
Jordan crossed
Mana ceases
Exo 16:35
Jericho
Destroyed
Shavuot, Torah ann. Tue,
June 9., Josh. 8:34, III.6
Battle of Gibeon,
Joshua's long day
July 26, 1592 BC
ΔT = 32*T²-43200
ΔT = 32*T²
Mursili I sacks Babylon
Ahmose
Tao
Caleb Age Synchronism, Josh. 14:10
Allotment of the land
Josh 14:15, rest from war
Kassites take over Bal
Eclipse text
Eclipse text
Samsu-Ditana
Sharma Adad II
Erishum III
Šamši-Adad II
Išme-Dagan [II]
Shemittah



Deut. 31:10, Septennial Torah Reading
Joshua dies, est
Judges 3:8
King of Mesopotamia
Othniel
Judges 3:11
Eglon of Moab
Judges 3:14
Judges 3:30
Years from Creation
Neglected Sabbatical
Acts 13:20
Ezek. 4:5 Era, 390 years
Israel's 300 year possession of Heshbon, Judges 11:26
Enumeration of neglected Sabbath years up to 70
390 year sin of Israel suspended
No Passovers
Chushan-Risha-thaim
Othniel, Jud. 3:11
Lev. 26:43
Passover (Exodus) not celebrated
Eglon of Moab
Kamose
Ahmose I
Khamudi
Amenhotep I
Thutmose I
Thutmose II
Avaris Sacked
Sharuhen destroyed
Eclipse texts, Tell Muhammad
Kakrime?
Burnaburiash I (king of Mesopotamia)
Kashtilliash III
Ulamburiash
Šamši-Adad III
Aššur-nirari
Puzur-Aššur [III]
Enlil-nasir
Nur-ili

Ehud

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
F1	Broken Sabbath years
F2	450 years Acts 13:20
G2	Jug. 11:26, 300
H1	390 years suspended
H2	480 National Passovers
I1	Ehud 80 years

Battle of Megiddo — lunar date 23

lunar date 24

lunar date 19

Judges 3:30

Enumeration of neglected Sabbath years up to 70

390 year sin of Israel suspended

390 year sin of Israel suspended

390 year sin of Israel suspended

Acts 13:20

Acts 13:20

Years from 2635

Ehud

Ehud

Ehud

Thutmose III

Aššur-rabi

30 years to assigned to two kings

Aššur-nadin-ahhe

Agum III

Karaindaš (Kassites)

Aššur-bēl-nišēšu

Amenhptep II

Aššur-rēm-nišēšu

Aššur-nadin-ahhe [II]

Ehlil-nāṣir

Aššur-nirari

Eriba-Adad [

Judges 4:2

Jabin of Hazor

Judges 4:3
Judges 5:31

Deborah

Judges 6:1

Midian

Judges 8:28

Gideon

Scroll Legend

A	B.C. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
F1	Broken Sabbath years
F2	450 years Acts 13:20
G2	Jug. 11:26, 300
H1	390 years suspended
H1	390 years counted
H2	480 National Passovers
I1	Jabin of Hazor
I1	Deborah
I1	Midian
I1	Gideon

lunar date

Scroll Legend

A	B.C. Years	F2	450 years Acts 13:20
B	Year of World	G2	Jug. 11:26, 300
C	Sabbatic Periods	H1	390 years suspended
C	Sabbath Year	H1	390 years counted
D	Seasons	H2	480 National Passovers
E	Sabbatic Periods	I1	Gideon
E	Sabbath Year	I1	Abimelech
E	Jubilee Year	I1	Tola
F1	Broken Sabbath years	I1	Jair

390 year sin of Israel suspended

Judges 8:32-33

Abimelech

Abimelech

Judges 9:22

Judges 10:1-2

Tola

Tola

Judges 11:26

Judges 10:3

Jair

Jair

Ammonites sieze Heshbon

Acts 13:20

Judges 10:5

Judges 10:6-8

Ammonites

Ammonites

lunar date

Scroll Legend

A	B.C. Years	H1	390 years suspended
B	Year of World	H1	390 years counted
C	Sabbatic Periods	H2	480 National Passovers
C	Sabbath Year	I1	Jair

Jepthah

Judges 12:7

Ibzan

Judges 12:8

Elon

Judges 12:11

Abdon

Judges 12:13

Philistines I

Judges 13:1

Samson

Judges 15:20

Judges 16:31

1Samuel 4:18

Passover (Exodus) not celebrated

390 year sin of Israel suspended

Passover (Exodus) not celebrated

Acts 13:20

Acts 13:20

Lunar date

Lunar date

Sea Peoples (Philstines) invade Egypt

Scroll Legend

- A — B.C. Years
- B — Year of World
- C — Sabbatic Periods
- C — Sabbath Year
- D — Seasons
- E — Sabbatic Periods
- E — Sabbath Year
- E — Jubilee Year
- F1 — Broken Sabbath years
- F2 — 450 years Acts 13:20
- H1 — 390 years suspended
- H1 — 390 years counted
- H2 — 480 National Passovers
- I1 — Philistines I
- I1 — Eli
- I1 — Philistines II
- I3 — Samson (estimated)
- I3 — Samuel's Life (est.)
- I1 — Ammonites
- I1 — Jephthah
- I1 — Ibzan
- I1 — Elon
- I1 — Abdon
- I1 — Philistines

Eli

Philistines II

Samuel

1Samuel 4:18

1Sam. 7:2

Acts 13:20

390 year sin of Israel suspended

390 year sin of Israel suspended

390 year sin of Israel suspended

Passover (Exodus) not celebrated

Sin of Israel, Ezek. 4:5, 390 years

Philistines II

Philistines II

Eli

Samuel's Judgeship

Saul's est. age

Jonathan's est. age

Life of Samuel, EST.

Acts 13:20

Ramses IV

Ramses V

Ramses VI

Ramses VII

Ramses VIII

Ramses IX

Ramses X

Ramses XI

Tiglath-pileser [I]

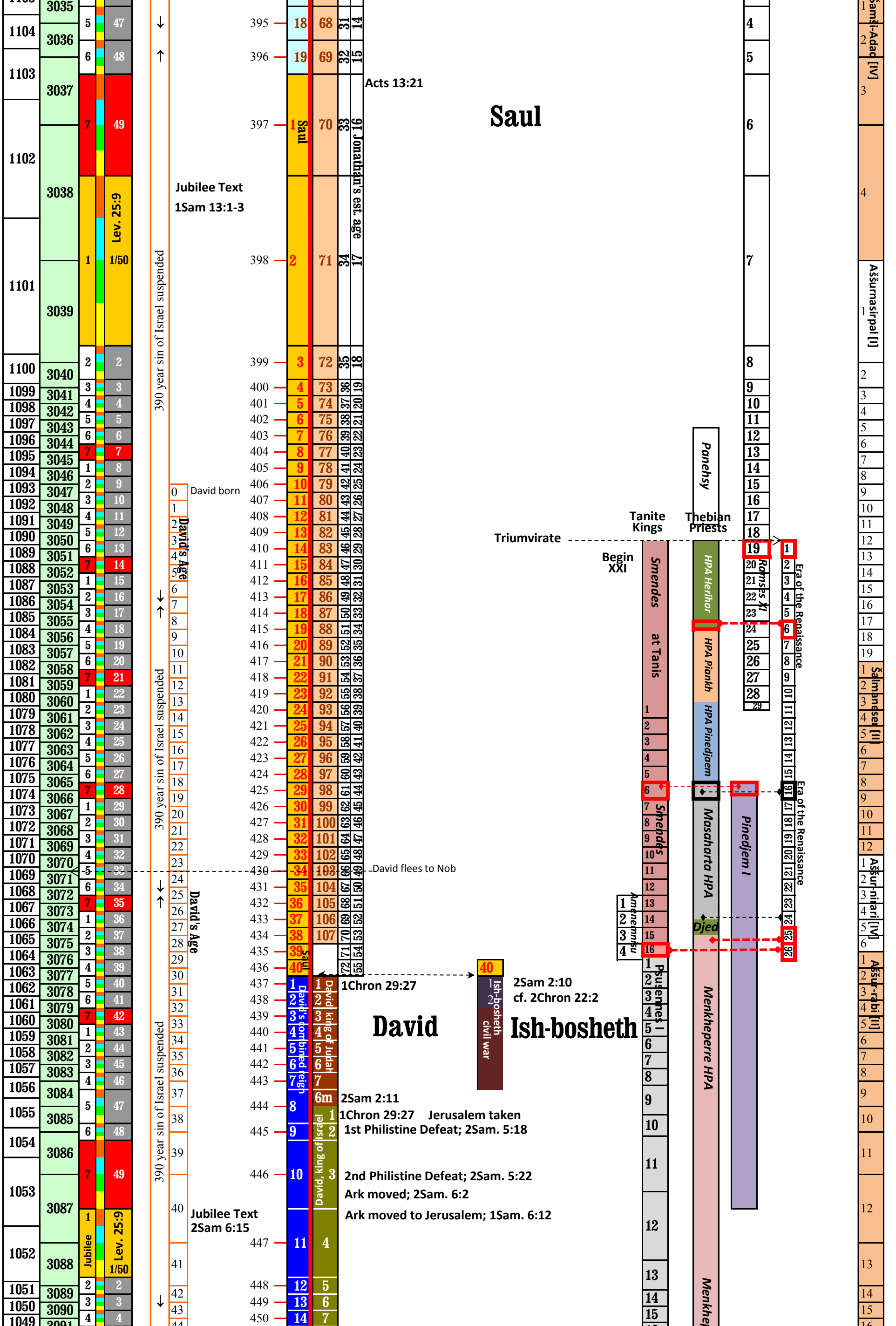
Aššur-bêl-kala

Eriba-Adad

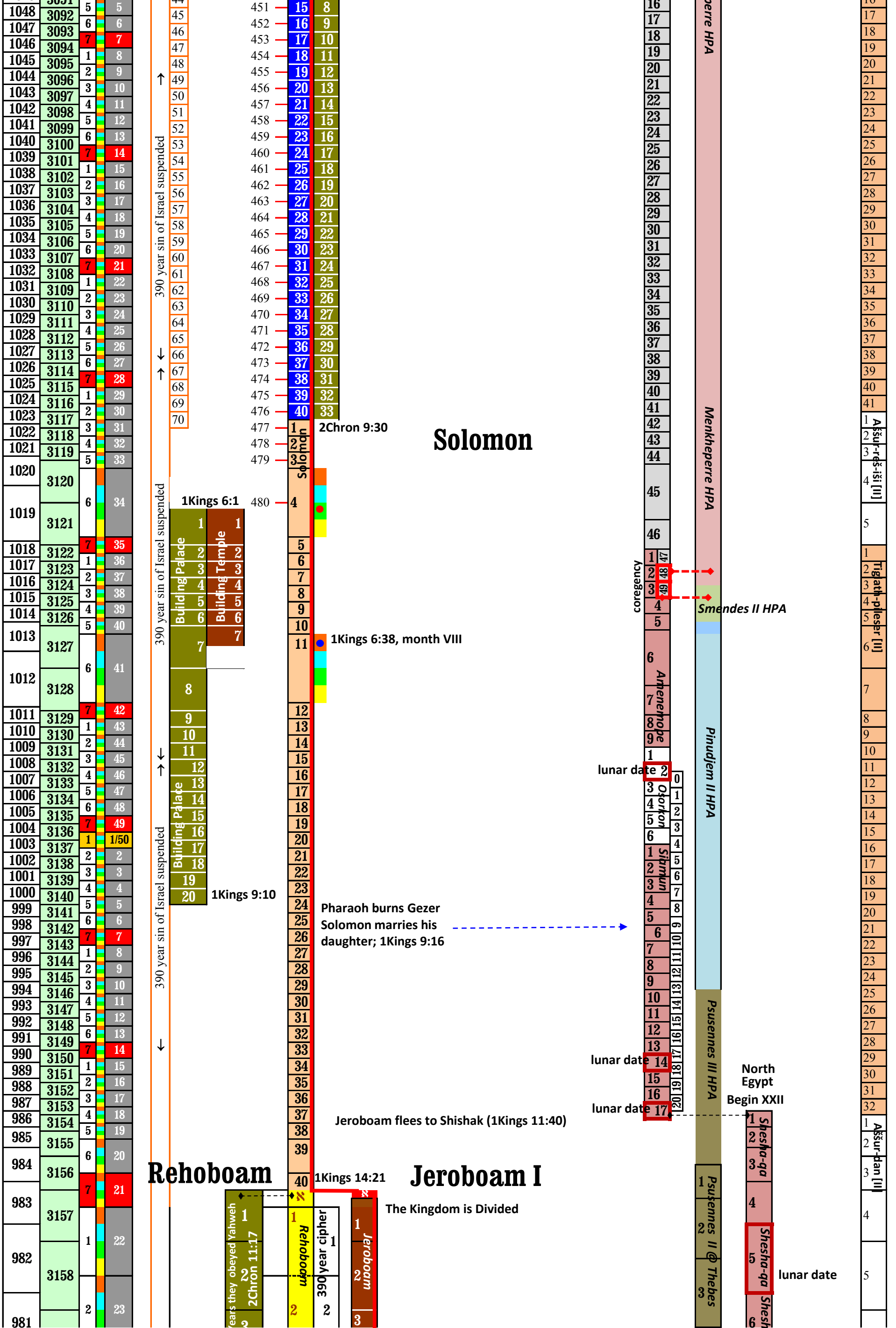
Ašarid-apil-Ekur

Scroll Legend

A	B.C. Years	F2	450 years Acts 13:20
B	Year of World	F2	390 years suspended
C	Sabbatic Periods	H1	390 years counted
C	Sabbath Year	H2	480 National Passovers
D	Seasons	I1	Philistines II
E	Sabbatic Periods	I3	Samuel's Judgeship
E	Sabbath Year	I1	Saul, king of Israel
E	Jubilee Year	I3	Samuel's Life (est.)
F1	Broken Sabbath years		



Saul
Acts 13:21
Jubilee Text
1Sam 13:1-3
Lev. 25:9
1/50
390 year sin of Israel suspended
David born
David's Age
Jubilee Text
2Sam 6:15
Jubilee
David flees to Nob
1Chron 29:27
2Sam 2:10
cf. 2Chron 22:2
David
Ish-bosheth
Ish-bosheth civil war
2Sam 2:11
1Chron 29:27 Jerusalem taken
1st Philistine Defeat; 2Sam. 5:18
2nd Philistine Defeat; 2Sam. 5:22
Ark moved; 2Sam. 6:2
Ark moved to Jerusalem; 1Sam. 6:12
Saul
Jonathan's est. age
David's combined reign
David, king of Judah
David, king of Israel
Triumvirate
Begin XXI
Tanite Kings
Thebian Priests
Smendes at Tanis
Smendes
Amenemnisu
Psusennes I
Panehsy
HPA Herihor
HPA Piankh
HPA Pinedjaem
Masaharta HPA
Djed
Menkheperre HPA
Menkhe
Pinedjem I
Ramses XI
Era of the Renaissance
Šamši-Adad [IV]
Aššurnasirpal [I]
Šalmaneser [II]
Aššur-nirari [IV]
Aššur-rabi [II]



Solomon
Rehoboam
Jeroboam I
390 year sin of Israel suspended
2Chron 9:30
1Kings 6:1
1Kings 6:38, month VIII
1Kings 9:10
Building Palace
Building Temple
Pharaoh burns Gezer
Solomon marries his daughter; 1Kings 9:16
Jeroboam flees to Shishak (1Kings 11:40)
1Kings 14:21
The Kingdom is Divided
Years they obeyed Yahweh
2Chron 11:17
Rehoboam
390 year cipher
Jeroboam
Menkheperre HPA
Smendes II HPA
Pinudjem II HPA
Psusennes III HPA
Psusennes II @ Thebes
Amenemope
Osorkon
Siamun
coregency
lunar date
North Egypt
Begin XXII
Shesha-qa
Aššur-reš-iši [II]
Tiglath-pileser [II]
Aššur-dan [II]

2Chron 11:17

1Kings 12:29-32

Yahweh's Feasts Rejected

Egypt Invades

1Kings 14:25

lunar date

End XXI

1Kings 15:1

Abijah

1Kings 15:9

Asa

Peace for 10 y

2Chron 14:9

1Kings 14:20

1Kings 15:25

Nadab

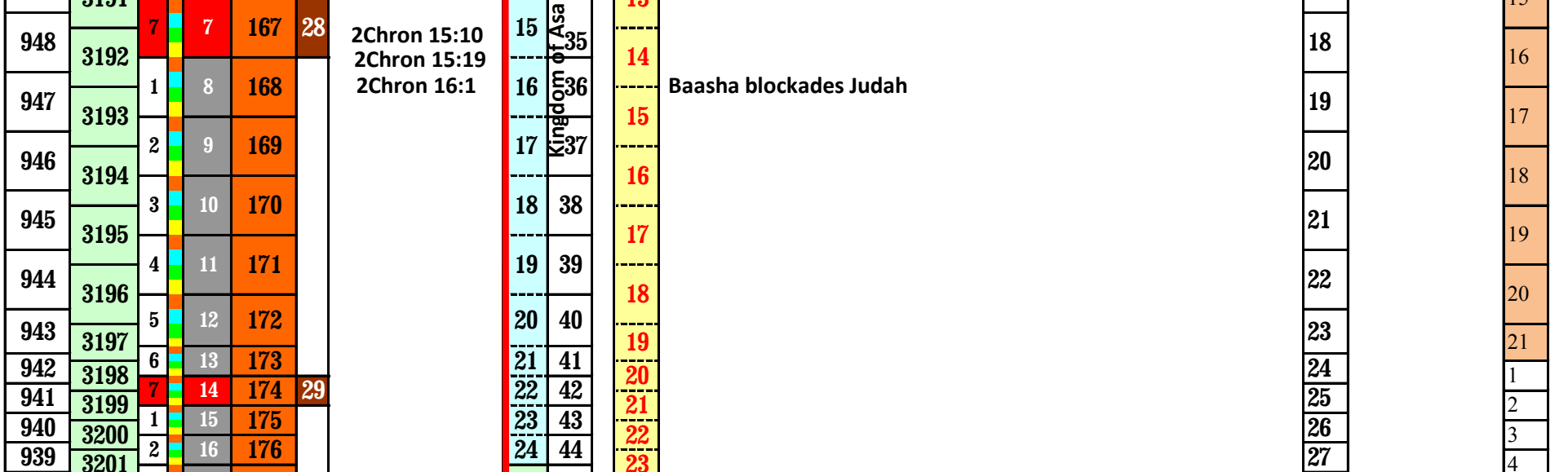
1Kings 15:28

Baasha

Zerah, the Nubian General of Osorkon I, and his million man army invade Judah.

Scroll Legend

A	B.C. Years	F1	390 years counted
B	Year of World	G1	Broken sabbaticals
C	Sabbatic Periods	G3	10 years peace
C	Sabbath Year	I1	Abijah
D	Seasons	I1	Abijah
E	Jubilee Period	I3	390 year disruption
E	Sabbath Year	J2	Jeroboam I
E	Jubilee Year	J2	Nadab
		J2	Baasha


948
947
946
945
944
943
942
941
940
939
3192
3193
3194
3195
3196
3197
3198
3199
3200
3201
7
1
2
3
4
5
6
7
1
2
7
8
9
10
11
12
13
14
15
16
167
168
169
170
171
172
173
174
175
176
28
29
2Chron 15:10
2Chron 15:19
2Chron 16:1
15
16
17
18
19
20
21
22
23
24
35
36
37
38
39
40
41
42
43
44
Kingdom of Asa
14
15
16
17
18
19
20
21
22
23
Baasha blockades Judah
18
19
20
21
22
23
24
25
26
27
16
17
18
19
20
21
1
2
3
4

1Ki 16:8

Elah

1Ki 16:15

2Chr 22:2

Zimri

1Ki 16:21

Civil War

1Ki 16:23b

1Ki 16:23

Omri

1Kings 15:23
2Chron. 16:12

1Ki 16:29
LXX: 1Kings 16:29

Ahab

2Chron 16:13

1Kings 22:41
LXX: 1Kings 16:28a

1Ki 16:23

Ethbaal of Sidon

Asa
Omri
Jehoshaphat
Ahab
Jezebel
Jehoram
Athaliah
Ahaziah
Zibiah
Ahaziah
Jehoram
Joash

2Chron 17:7

Jehoshaphat

Battle of Qarqar
Ahab slain by former Ally

1Ki 16:29
1Ki 22:51

Jehoram, prorex

Ahaziah

2 Captains of 50 slain by fire

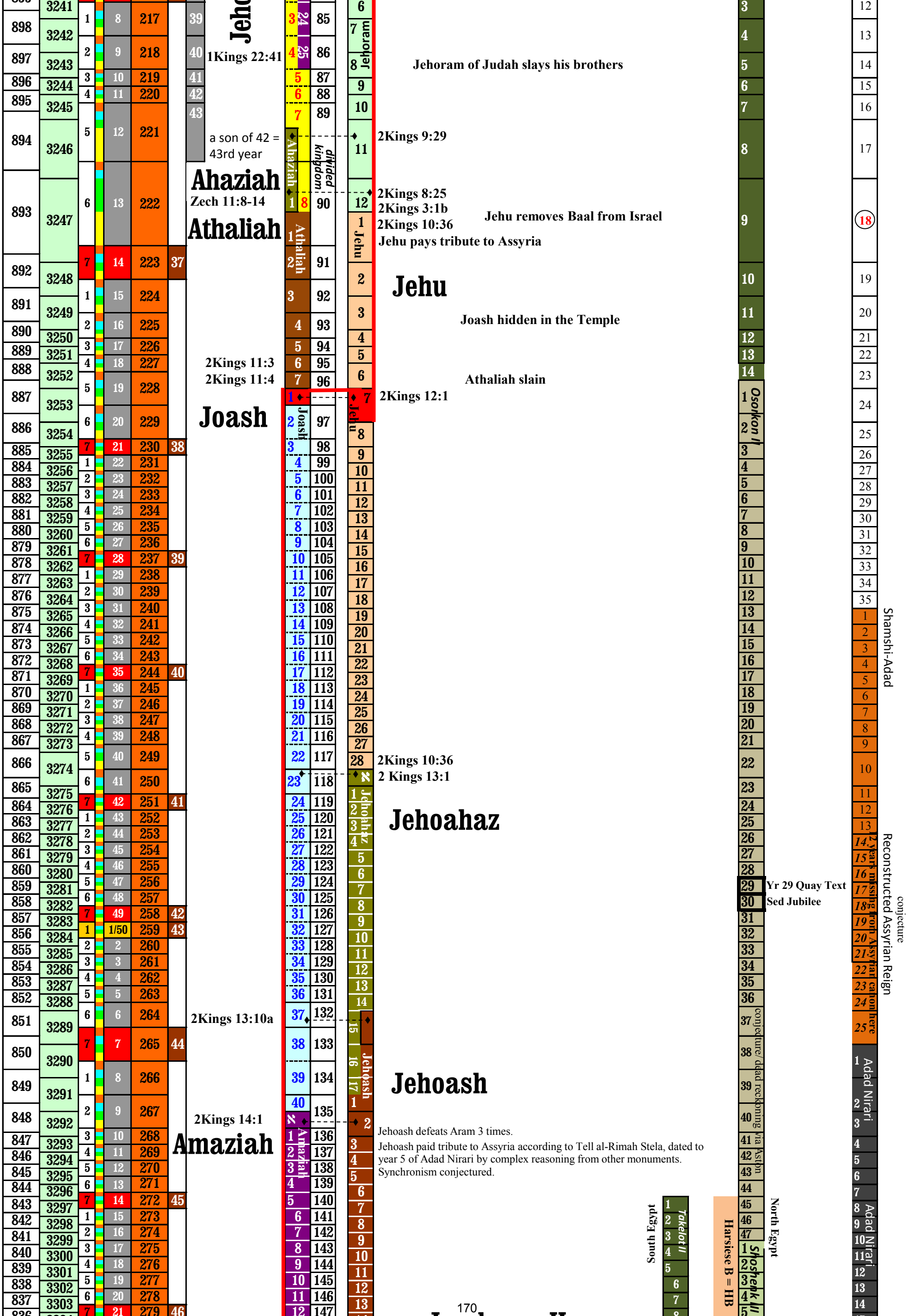
2Kings 1:17

2Kings 3:1a

Jehoram

2 Kings 8:16

Manetho: 3 Kings for 25 Years, emmend to 29 y



Jehoram of Judah slays his brothers
1Kings 22:41
a son of 42 = 43rd year
Ahaziah
Zech 11:8-14
Athaliah
2Kings 9:29
2Kings 8:25
2Kings 3:1b
2Kings 10:36
Jehu removes Baal from Israel
Jehu pays tribute to Assyria
Jehu
Joash hidden in the Temple
2Kings 11:3
2Kings 11:4
Athaliah slain
2Kings 12:1
Joash
2Kings 10:36
2 Kings 13:1
Jehoahaz
2Kings 13:10a
Jehoash
2Kings 14:1
Amaziah
Jehoash defeats Aram 3 times.
Jehoash paid tribute to Assyria according to Tell al-Rimah Stela, dated to year 5 of Adad Nirari by complex reasoning from other monuments. Synchronism conjectured.
Yr 29 Quay Text
Sed Jubilee
Harsiese B = HB
South Egypt
North Egypt
Shamshi-Adad
Reconstructed Assyrian Reign
conjecture
Adad Nirari

Jeroboam II

2Kings 13:10b

2Kings 14:23

2Kings 14:2

2Kings 14:17

Uzziah

2Kings 15:1

2Chron. 26:15

Regency

Regency

Zachariah: 2Kings 15:8

6 m

Shallum: 2Kings 15:13

1m

2Kings 15:17

Menahem

1st Rebellion

2nd Rebellion

3rd Rebellion

lun eclipse 1/14/829

Hightest date

Nile Level text

Nile Level text

lunar date

Highest secure date

Quay Text 13

Jonah 1:1

Pul

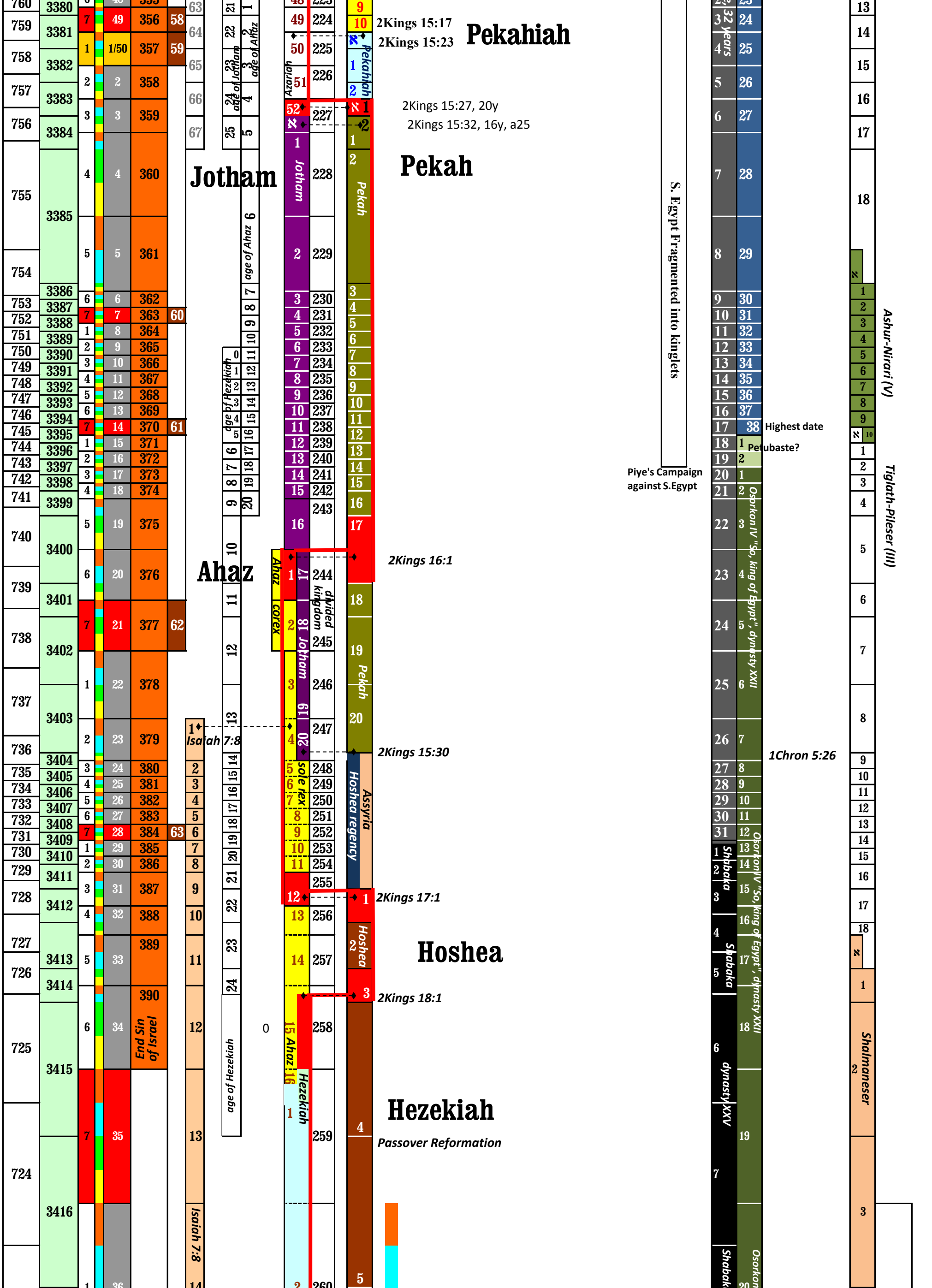
1Chron. 5:26

1Kings 15:19

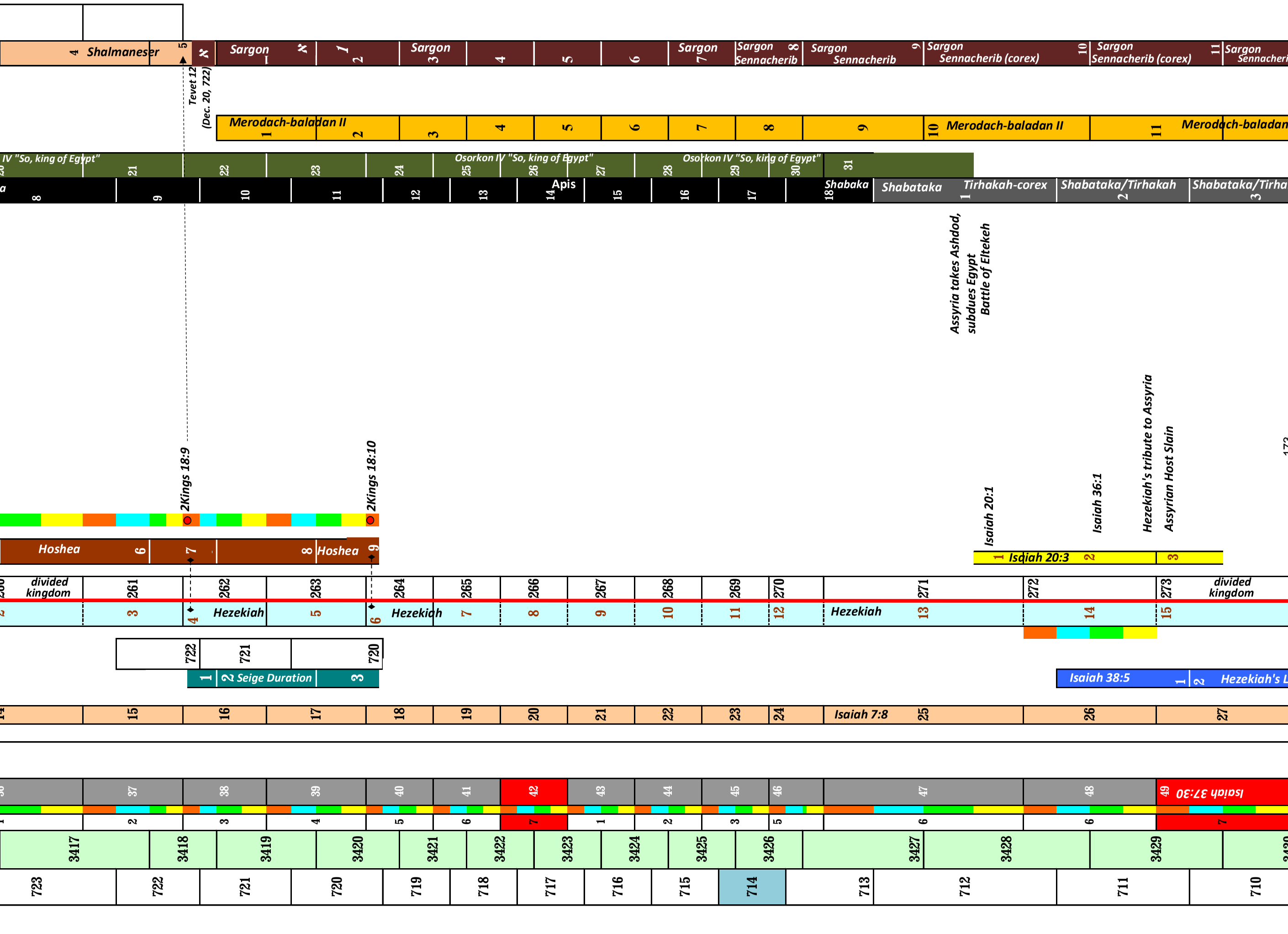
Hightest date

Son of Pami

Estimated Position of Assyrian Gap



Pekahiah
2Kings 15:17
2Kings 15:23
2Kings 15:27, 20y
2Kings 15:32, 16y, a25
Pekah
Jotham
Ahaz
2Kings 16:1
2Kings 15:30
2Kings 17:1
2Kings 18:1
Hoshea
Hezekiah
Passover Reformation
Isaiah 7:8
End Sin of Israel
Azariah
Jotham
Ahaz
corex
divided kingdom
sole rex
Hoshea regency
Assyria
Pekah
Hoshea
Ahaz
Hezekiah
age of Jotham
age of Ahaz
age of Hezekiah
S. Egypt Fragmented into kinglets
Piye's Campaign against S.Egypt
32 years
Highest date
Petubaste?
Osorkon IV "So, king of Egypt", dynasty XXII
Shabaka
dynasty XXV
1Chron 5:26
Ashur-Nirari (V)
Tiglath-Pileser (III)
Shalmaneser


Shalmaneser
Sargon
Sennacherib
Sennacherib (corex)
Merodach-baladan II
Merodach-baladan
IV "So, king of Egypt"
Osorkon IV "So, king of Egypt"
Apis
Shabaka
Shabataka
Tirhakah-corex
Shabataka/Tirhakah
Shabataka/Tirha
Tevet 12
(Dec. 20, 722)
Assyria takes Ashdod,
subdues Egypt
Battle of Eltekeh
Assyria
2Kings 18:9
2Kings 18:10
Hoshea
Hezekiah
divided
kingdom
Seige Duration
Isaiah 7:8
Isaiah 20:1
Isaiah 20:3
Isaiah 36:1
Hezekiah's tribute to
Assyrian Host Slain
Isaiah 38:5
Hezekiah's L
Isaiah 37:30

Manasseh

2Kings 21:1

Isaiah 37:30

1/50

Isaiah 7:8

age Manasseh

Isaiah 38:5

Hezekiah

Sin of Judah Ezek 4:6

Ezek 4:6

Manasseh

2Chron 33:11

Isaiah 7:8

Ezra 4:2

7x390 = 2730

Assyria invades Egypt

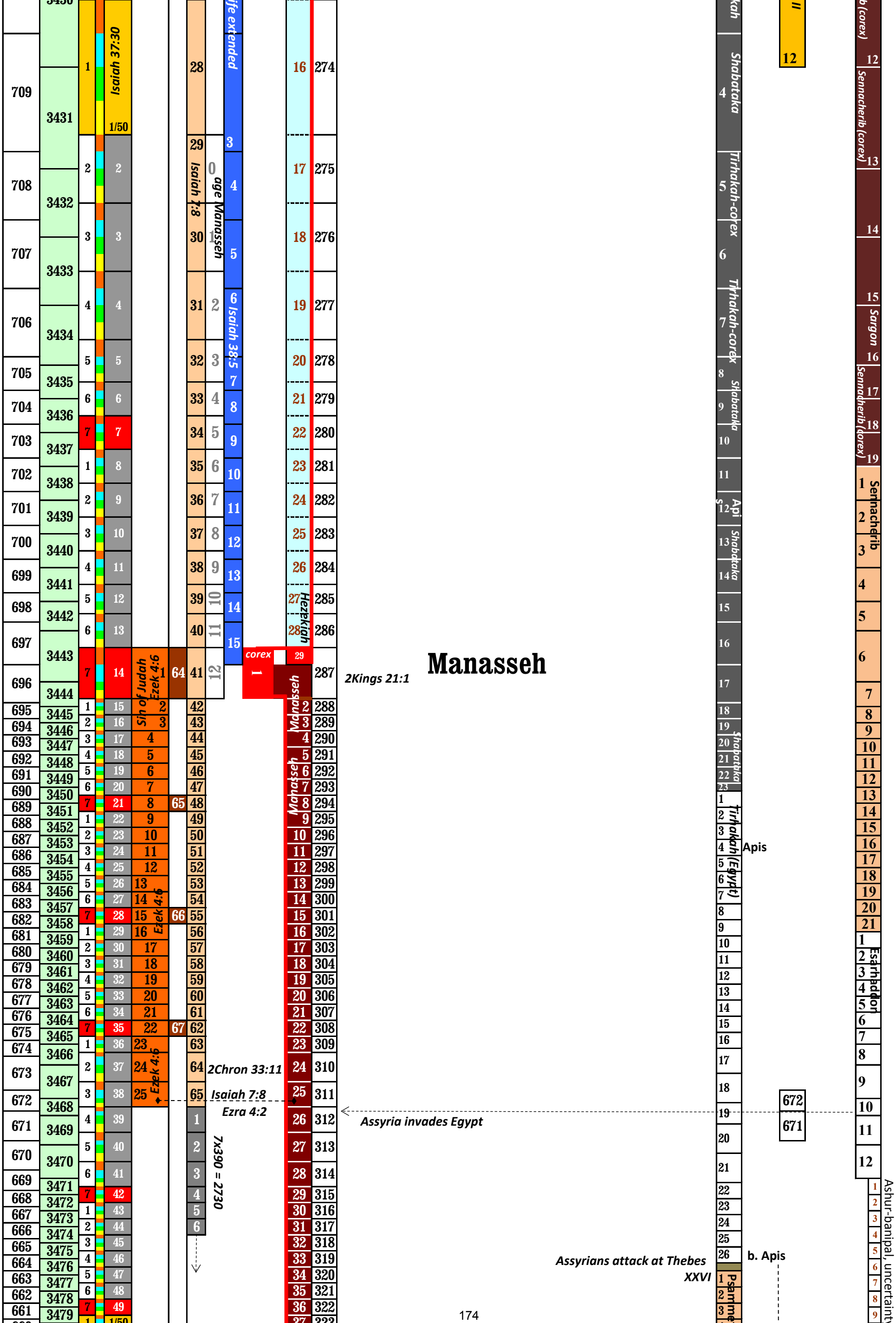
Assyrians attack at Thebes XXVI

Shabataka

Tirhakah-corex

Tirhakah (Egypt)

Apis



b. Apis

Psamme

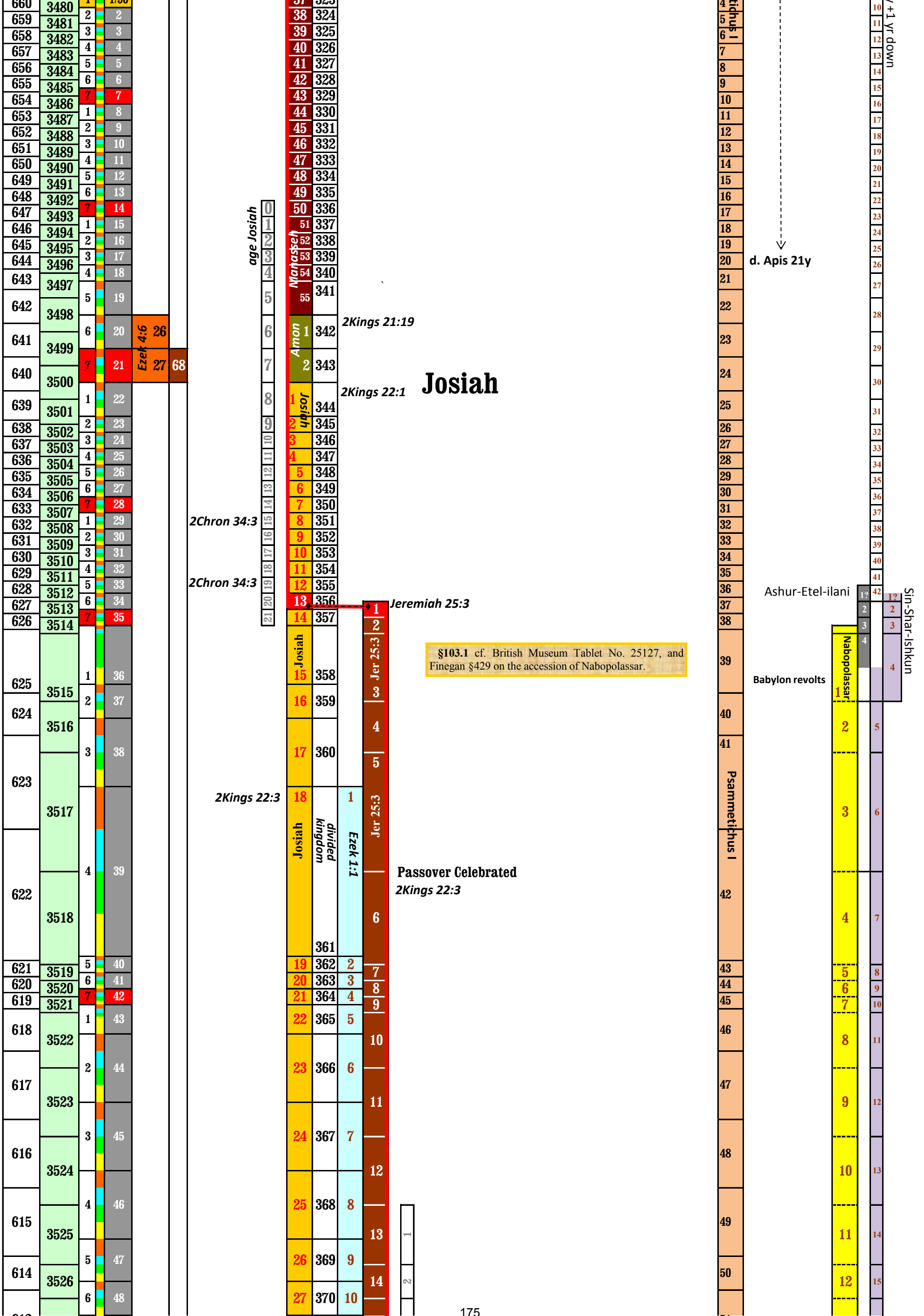
Sennacherib (corex)

Sargon

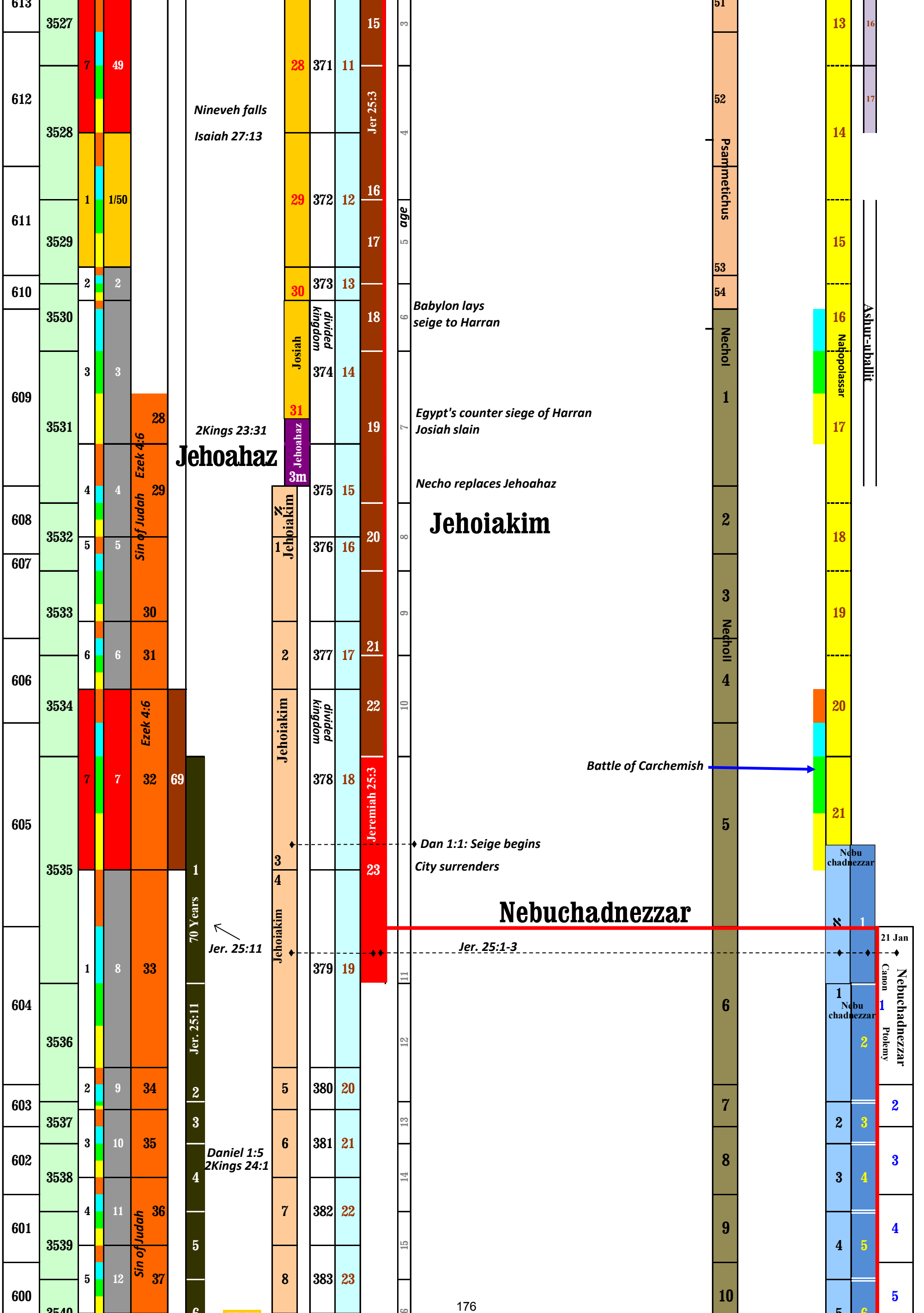
Sennacherib

Esarhaddon

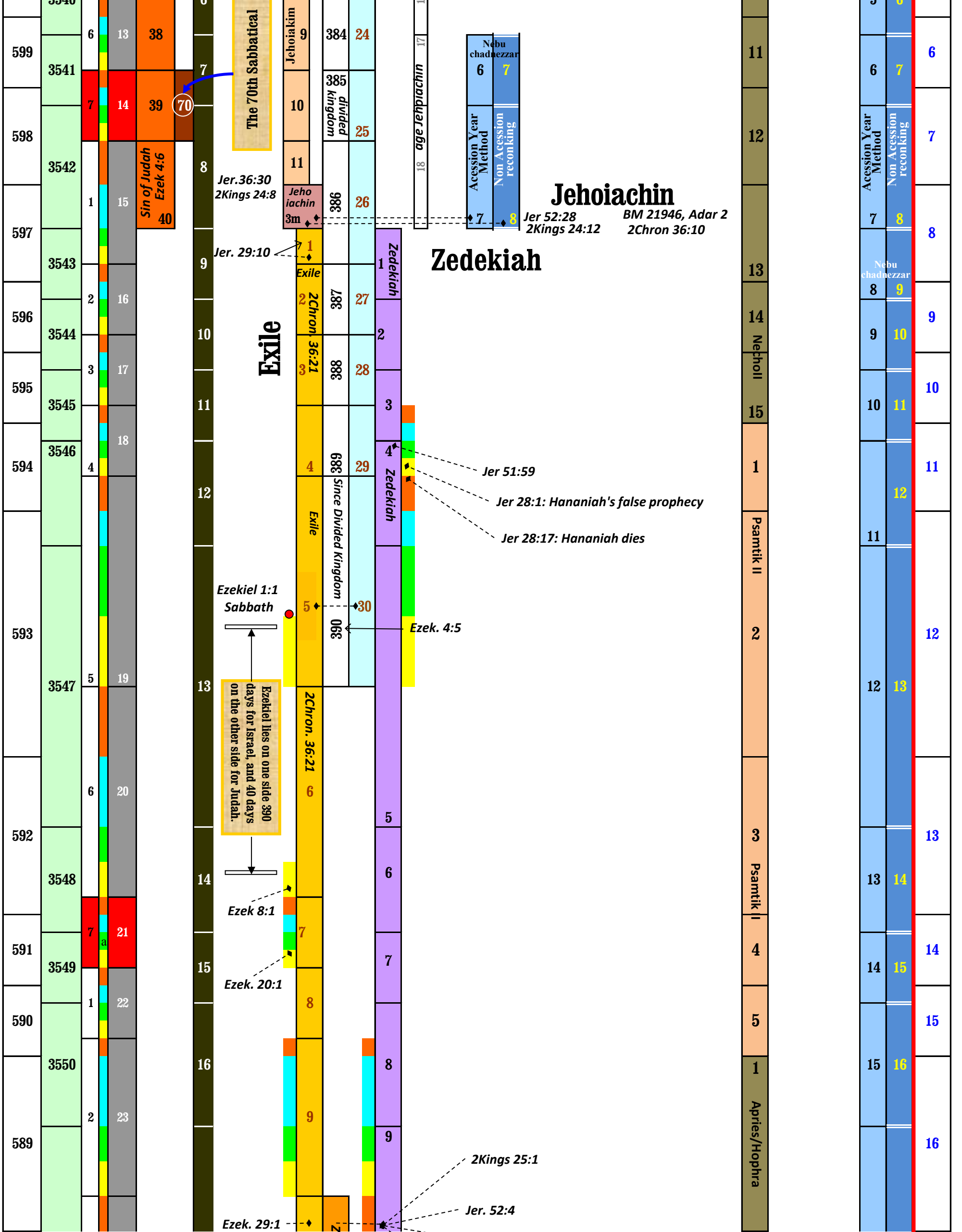
Ashur-banipal, uncertainty



§103.1 cf. British Museum Tablet No. 25127, and Finegan §429 on the accession of Nabopolassar.



Nineveh falls
Isaiah 27:13
2Kings 23:31
Jehoahaz
Jehoiakim
Nebuchadnezzar
Babylon lays seige to Harran
Egypt's counter siege of Harran
Josiah slain
Necho replaces Jehoahaz
Battle of Carchemish
Dan 1:1: Seige begins
City surrenders
Jer. 25:11
Jer. 25:1-3
Daniel 1:5
2Kings 24:1
Jer 25:3
Jeremiah 25:3
Ezek 4:6
Sin of Judah
70 Years
Josiah
Jehoahaz
Jehoiakim
divided kingdom
age
Psammetichus
Nechol
Nabopolassar
Ashur-uballit
Nebu chadnezzar
21 Jan
Canon
Ptolemy



The 70th Sabbatical
Jehoiakim
Jehoiachin
Zedekiah
Exile
Sin of Judah Ezek 4:6
Jer.36:30
2Kings 24:8
Jer. 29:10
Jehoiachin
3m
Exile
2Chron. 36:21
Since Divided Kingdom
divided kingdom
age Jehoiachin
Nebu chadnezzar
Acession Year Method
Non Acession reconking
Jer 52:28
2Kings 24:12
BM 21946, Adar 2
2Chron 36:10
Jer 51:59
Jer 28:1: Hananiah's false prophecy
Jer 28:17: Hananiah dies
Ezekiel 1:1
Sabbath
Ezek. 4:5
Ezekiel lies on one side 390 days for Israel, and 40 days on the other side for Judah.
Ezek 8:1
Ezek. 20:1
2Kings 25:1
Jer. 52:4
Ezek. 29:1
Necholl
Psamtik II
Psamtik I
Apries/Hophra

Ezek 24:1

Jer 39:1

ech. 1:12 anger

Exile

2Chron. 36:21

70 year indignation

Zedekiah

Jer 32:1

Ezek. 30:20

Ezek. 31:1

2Kings 25:3

Jer. 52:6

Jer 39:2

Zedekiah

Non Acession reconking

Nebucadnezzar

2Kings 25:8

2Kings 25:2

Fall of Jerusalem

Jer. 52:29

Nebu chadnezzar

Non Acession reconking

§106.0

Accession Year Method

Ezekiel 33:21

Ezekiel 32:1

70 Years fasting

Exile

Jer. 52:30

Ezek. 40:1; 10/4/574 BC

Siege of Tyre

Ezek. 29:17; 3/28/571 BC

Hophra

Jer. 44:30

Dan 4:1, 29

Invasion of Egypt

massive Nile flood

Dan. 4:29; Madness begins 9/10/570 BC at New Moon

Babylonian garrisons plunder Egypt enriching Babylon: Dan. 4:36.

VAT 4956

Note: the extent and duration of Egypt's exile in history is uncertain. The prophecy may have elements to be fulfilled in the future.

Dan. 4:34; 9/22/563 BC

2Kings 25:27; 4/2/561 BC
Jehoiachin Released

Amal Marduk

lunar date

Belshazzar

Dan. 7:1

10 Jan

179

Fall of Babylon to Darius

Dan 5:31
Dan 6:28

Darius the Mede

also styled Cyrus

Dan 5:30

Dan 9:1

Dan. 8:1

Dan 10:1

Death of Daniel :Dan 1:21

Prosperity returns to Egypt

Final sections of abandoned land are resettled

Ezra 1:1

Cyrus

also styled Cambyses

prophetical Cyrus, Isa. 44:28

End 70 year Exile

Ezra 3:1

Mystery Babylon?

suspended Rev 11-19

Ezek 29:12: Egypt desolated 40 years

age of Darius (Cyrus)

Exile

fastings

anger

2Chron. 36:21

Amasis

Darius the Mede

Cyrus

coregent

sole rex

Ezra 3:8

Ezra 4:4

Cyrus Invades Egypt
Isa. 45:1, 14

Psamtik III

Astronomical Dating, 7th year text

Smerdis

Darius

prophetical Cyrus, Isa. 44:28

High Priest: Yeshua

Neh. 12:10-11

Haggai 1:1

Haggai 1:15

Haggai 2:1

Zechariah 1:1

Haggai 2:10

Zech 1:7-12

End 70 year Indignation

Zech. 7:1; 70 Years Fasting

Ezra 6:15; Temple Completed
Ezra 6:19: Passover kept.

Col	Era
A	BC Years
B	Year of the World
C	Sabbatic periods
D	Seasons
E	Jubilee periods
I1-2	Levitical High Priests
S1-T1	Kings of Persia
S3	Seasons
T2-3	BC Years

High Priest: Yeshua

Neh. 12:10-11

High Priest: Yoiakim

Ahasuerus

also styled Xerxes

styled Cyrus cf. Isa. 45:1, 14

Egypt revolts

Ezra 4:6

Revolt suppressed

Xerxes' 180 day feast: Esther 1:3

Greek Invasion Planned

Amestris' (Vashti) title revoked

Battle of Thermopylae

Xerxes at Sardis

Esther taken: Est 2:1

Xerxes leaves for Susa

Amestris' revenge

Esther made Queen: Est. 2:16

Haman's evil decree: Est 3:7

Mordecai's counter decree: 8:9

Haman's decree effective date: 3:13

fighting

Murder of Xerxes: Month V, day 14+x
Late Summer 465 BC

Artaxerxes I

styled Cyrus, Isa. 44:26

Artaxerxes age

Nehemiah

Artaxerxes I, Egypt

Artaxerxes I, Persian reign

Artaxerxes I, Judean reign

Ezra's 7th Year trip to Jerusalem: See under Artaxerxes II

The sequence of High Priests in Ezra and Nehemiah is conclusive proof that Ezra's final reforms were in the 7th year of Artaxerxes II (397).

VAT 5047 astronomical dating

In Judea, the regnal year was reckoned from autumn.

Neh. 5:11: Debt release enforced.

Neh. 6:15: walls finished

Neh. 7:73b-8:1; Reading of Torah by Ezra

Deut. 31:10

Neh 9-10

High Priest: Yoiakim — Neh. 12:10-11

High Priest: Eliashib — Neh. 12:10-11

High Priest: Eliashib — Neh. 12:10-11

49 Years to Ezra, first anointed

Nehemiah's administration, first term

Neh. 1:1

Neh. 2:1

Dan. 9:25 First Sabbatical Year

Sabbatical Year

Neh. 5:14

Eliashib's compromise with Tobiah
Yoiada takes a foreign daugther for his son.

Wall Dedication

High Priest Yoiada deposed

Sometime after the wall dedication Ezra the scribe returned to Babylon to raise support and bring more exiles to Jerusalem.

Neh. 12:22

Darius The Persian

Elephantine Papyrus TAD A4.7 = AP 30 = 20th Marheshwan, 17th year Darius, to Bigvai (Bagohi) and Yohanan.

Yohanan's brother plans to usurp the High Priests position with the help of Bagoses.

Yohanan and his brother quarrel, and the brother is slain in the Temple in self defense. The Persian General Bagoses persecutes the Jews for seven years, imposing tribute on every sacrifice.

Artaxerxes II

styled Cyrus, Isa. 44:28

Persia lost Egypt in Nov 400

Last of the Seven Sabbaths

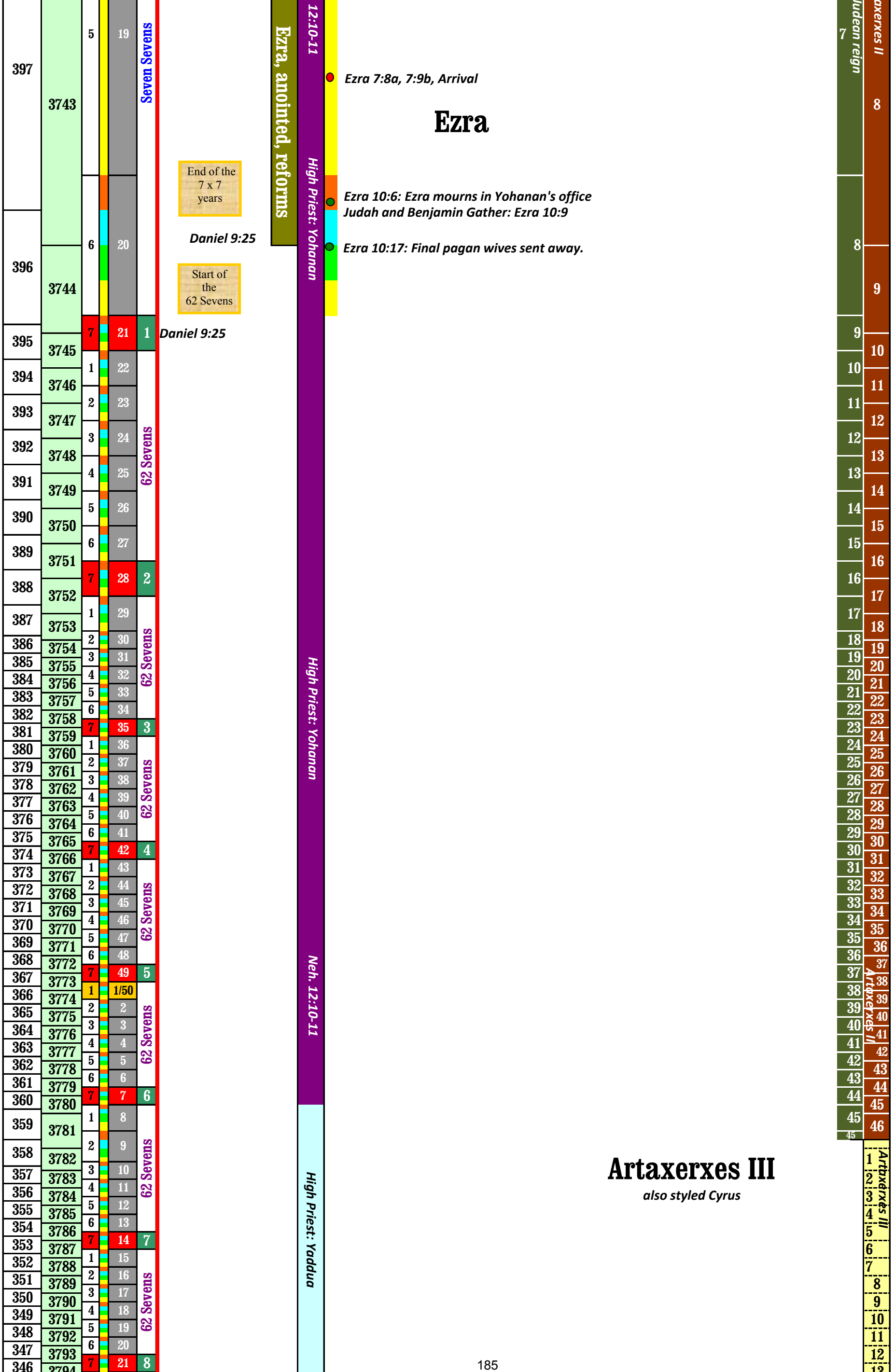
Ezra appointed Governor of Judea by Artaxerxes II

Ezra 7:8b-7:9a

Ezra 8:31: Exiles Depart

In Judea, the regnal year was reckoned from autumn.

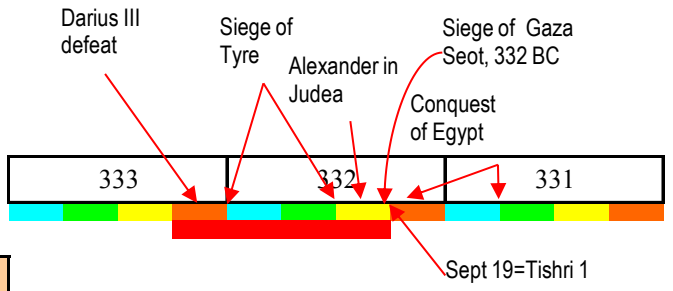
Persia lost control of Egy



Ezra 7:8a, 7:9b, Arrival
Ezra
Ezra 10:6: Ezra mourns in Yohanan's office
Judah and Benjamin Gather: Ezra 10:9
Ezra 10:17: Final pagan wives sent away.
End of the 7 x 7 years
Daniel 9:25
Start of the 62 Sevens
Daniel 9:25
Ezra, anointed, reforms
12:10-11
High Priest: Yohanan
High Priest: Yohanan
Neh. 12:10-11
High Priest: Yaddua
Seven Sevens
62 Sevens
62 Sevens
62 Sevens
62 Sevens
62 Sevens
62 Sevens
62 Sevens
Artaxerxes III
also styled Cyrus
Artaxerxes II
Artaxerxes II
Artaxerxes III

Neh. 12:10-11

High Priest: Yaddua



Alexander the Great

Persian Defeat
Siege of Tyre and Gaza
Alexandar invades Egypt

The Seleucid Era

The battle of Gaza

Tan column: Syrio-Macedonian method of counting Seleucid Era (A.S.), which is the standard era used by all Jews in Syria and Israel. It counts starting year 1 with the autumn after the battle.

The yellow column represents the Seleucid era counted on a spring basis according to the Babylonian method using an ancession year, which may at times have been used by Babylonian Jews. Year 1 starts with the spring following the battle.

| | | |

Antiochus IV

1Mac 1:10

Attack on Egypt

1Mac 1:20: Temple plundered

two years

1Mac 1:29,54; altar desolated

1Mac 2:70: Mattathias dies

1Mac 3:37: 1st invasion

Judas wins

1Mac 4:28: 2nd invasion

Judas wins

1Mac 4:52: Hannukah

Judas fortifies Beth-Zur

1Mac 6:16: Antiochus IV dies

Lysias defeats Philip

Demetrius defeats
Lysias 1Mac 7:1

2Mac 13:1: Lysias' Invasion
Lysias takes Beth-Zur

Alcimus apointed by Demetrius
2Mac. 14:4, 13, 1Mac 7:9

1Mac. 9:3: Judas killed in battle

Jason the wicked

Menelaus the wicked

Priesthood contended

The Hasmonean Era of Josephus

62 Sevens

Antiochus IV

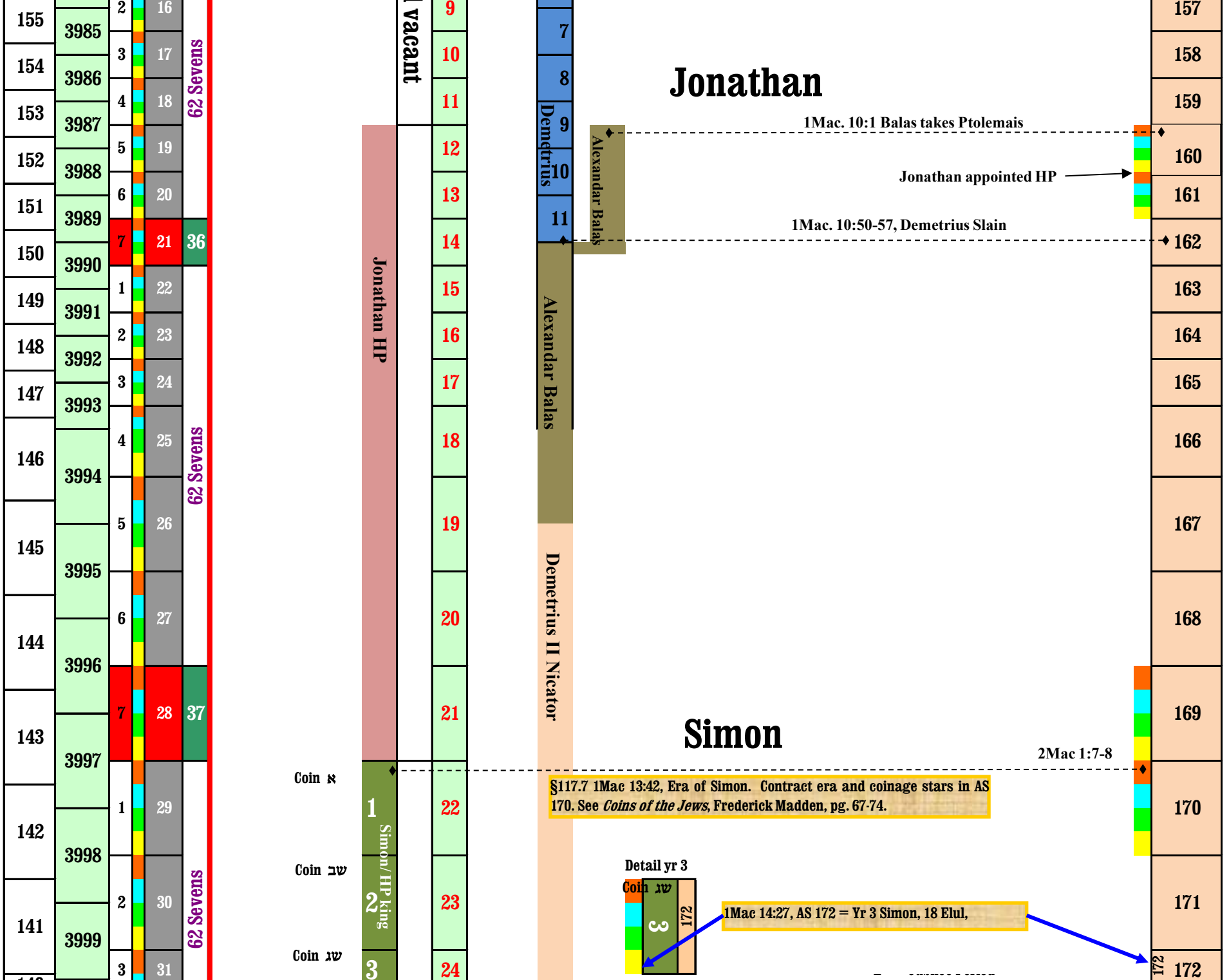
Lysias (regent)

Eupator

Demetrius

Sab Year

Era of the Greeks



Jonathan
Simon
1Mac. 10:1 Balas takes Ptolemais
Jonathan appointed HP
1Mac. 10:50-57, Demetrius Slain
2Mac 1:7-8
§117.7 1Mac 13:42, Era of Simon. Contract era and coinage stars in AS 170. See *Coins of the Jews*, Frederick Madden, pg. 67-74.
Detail yr 3
1Mac 14:27, AS 172 = Yr 3 Simon, 18 Elul,
Jonathan HP
Simon/ HP king
Alexandar Balas
Demetrius
Demetrius II Nicator
vacant
62 Sevens
Coin א
Coin שב
Coin שג

Coin שד

Coin שה

Simon murdered
1Mac 16:14, 177
Emend to 175

Aristobulus

Hyrcanus II vs.
Aristobulus

Diodotus Tryphon

Antiochus VII invades

Demetrius II

Alexander II
Zabinas

62 Sevens

Herod

Pompey captures Jerusalem on a fast day, possibly the 10th of Tebeth, Jan 2, 63 b.c.

Pompey x Jer.

Caesar in Syria
Ant. 14.158
cf. Usher, Annals

"Tiberius was born at Rome, on the Palatine, the sixteenth day before the Kalends of December [Nov. 16], in the consulship of Marcus Aemilius Lepidus and Lucius Munatius Plancus [42 BC] (the former for the second time) while the war of Philippi was going on. In fact it is so recorded both in the calendar and in the public gazette." (Suetonius/12Caesars/Tiberius #5). He writes he died "in the seventy-eighth year of his age" (Tiberius 73). Tacitus also writes he died "in the seventy eighth year of his age" (Book 6.51). Dio Cassius writes, "seventy-seven years, four months, and nine days" (Dio 58.28.5). Thus three Roman historians are agreed on the month and year of Tiberius birth and death. The 78th year of his age means that he was age 77 (the 78th year being in progress at his death).

birth Tiberius

62 Sevens

Augustus

Calvinus
Pollio

Censorinus
Sabinus

Pulcher
Norbanus

Pathtians defeated by Ventidius

Siege of Samosata

Jos. Ant. 15:7: Sabbatic year still going on

Suicide of Cleopatra

Augustus

Temple Completed

Marcus Titius

Varus

of Galatia

ria

rocurator

← The Parthians invade Syria; the Hasmoeans side with Persia; Herod's brother captured.

Antony sails to Tyre in the early spring after hearing about the Parthian invasion, but bypasses it sailing to Italy, and after a very brief Roman civil war makes peace with Octavian.

⇐ Herod sails after Antony into a freak spring storm; he reaches Italy after peace is made.

← Herod appointed king in the 184th Olympiad/ Antony marries Octavia

← Herod lands at Ptolemais

← The troops go into winter quarters, *Jos. Ant. 14:406, 411, 417,; Jos. War 1:297, 302, 308;*

← Sossius sent to aid Herod

← The troops go into winter quarters, *Ant. 14:461, 465.*

← Fall of Jerusalem to Herod and Sossius

← Antigonus is executed.

31 723 ◆ Antony's defeat at Actium, Sept 2, 31, in the 7th year of Herod.

Obodas III, Nabatea

There is a famine in Judea, Ant. 15:299.

Herod buys grain from Egypt to relieve the famine.

In his 18th year Herod proposes the remodel and expand the Temple; *Ant. 15.380.* Preparation takes at least a year, and the building of the Temple a year and a half.

preparation time for temple

After the temple is complete, an era of anniversaries of completion is counted, as with the age of a person from birth. This is noted in John 2:20 to come to 46 years during the first Passover of Yeshua's ministry in A.D. 30.

John 2:20

Josephus tells us that the expansions of the outer courts of the temple took eight years.

Aretas IV

Herod begins to suspect everyone of plotting against him. He tortures the suspects, and imprisions others.

When Obodas III died, Aeneas becomes sole regent Aretas IV after a coregency of five years. Ant. 16.294-298

Herod's status downgraded from friend to subject for a short time.

Herod murders his two sons in line for the throne, and Antipater is made coregent. (War 1.625, 631-632). Compare coregency of Jehoram of Judah 901/900 b.c.

Caesar failing to confirm Aretas IV as king leaves Nabatea under provincial status, no coins minted by Aretas, who is given the status of governor.

The Roman cenus begins. (Tertullian)

John the Baptist born, spring 2 B.C.

The Pharisees refuse to register for the census, *Ant. 17:42*.

Quirinius takes over as governor of Syria to complete the census.
Aemelius Secundus registers the city of Apamea, Syria.

Messiah Born on Yom Teruah

Magi visit, Shebat 1, Dec. 29, 2 B.C./flight to Egypt/inants Slain

Eclipse of the moon, Jan 9/10, 1 B.C. Herod dies.

Judea revolts against Rome and Herod's sons. Quinctillius Varus quells the revolt crucifying up to 2000 Jews *(Ant. 17:295)*. Caesar refuses to give the kingdom or royal dignity to Herod Antipas, and makes him tetrarch of Galilee and Perea. He says he will consider making Archelaus king of Judea, but fails to do so. Philip is apointed over Ituraea and Trachonitis.
Jospeph, Miriam, and Yeshua return from Egypt.

Aretas IV kingship is reinstated by Caesar after he assists Varus in suppressing the revolt of Judea, and the right to mint coins restored.

Herod Archelaus deposed by Caesar without ever being confirmed as king.

In A.D. 9, Varus and the Roman legions under him were destroyed by the Germans in the Tetuoburg Forest.

Yeshua in his Father's House

Tiberius Caesar took over the job of adminstrating the Roman State Aug. 19, A.D. 14, but he did not accept the honor of *Princeps* until it was voted by the Senate Sept. 17, A.D. 14. Only as first citizen could Tiberius have regnal years, therefore the beginning of his factual first regnal year is not before Sept. 17th, AD 14. Tiberius' refusal to accept the honor of being Emperor is detailed by Tacitus. In any case factual (also called dynastic) years were not used in reckoning regins by Jews, Greeks, or Romans simply because the business world only used the standard year of their respective culture. Dynastic years were too hard to remember and deal with.

For AD 14, the Jewish New Year was Sept. 14th, and the Greek new year was October 15 in the Syro-Macedonian calendar. The Roman new year was Jan 1, AD 15. Now Suetonius states that Tiberius died "in the seventy-eighth year of his age and the twenty-third of his reign, on the seventeenth day before the Kalends of April, in the consulship of Gnaeus Acerronius Proculus and Gaius Pontius Nigrinus." This proves that the first year of his reign is counted after the turn of the new year for three cultures, Roman, Greek, and Jewish. The method used is the normal accession year method.

This reconing is absolutely secure and is vouchasafed by Scripture.

In A.D. 19 Tiberius expells the Jews from Rome and conscripts 4000 Jewish men for soldiers in Sardinia. Jos. Ant. 18.81-84. He also destroys the Temple of Isis. Ant. 18.65-80.

Tacitus writes, "THE year when Caius Asinius and Caius Antistius were consuls was the ninth of Tiberius's reign" (Book 4.1) These men were consuls in AD 23. This proves that the accesion year method was used to calculate the regin per the standard Roman, Greek, and Jewish new year. Pliny the Elder also states, "In the ninth year of the reign of Tiberius, in the consulship of C. Asinius Pollio and C. Antistius Vetus" (XXXIII.8).

The 15th year of Tiberius began Tishri 1 according to Jewish reckoning (which was Sept 8/9, AD 28) and on Jan 1, AD 29 by the Roman accession year method, and on October 9th according to the Syro-Macedonian calendar. These dates begin the 15th year according to the standard year of three cultures, Jewish, Roman, and Greek. This date is absolutely secure, being vouchsafed by Scripture, and is the only way of reckoning known, there being no others, and no evidence for any other reckoning.

John Begins Preaching

Messiah's Baptism; almost age 30

John 2:13 Passover

Herod Antipas' adulterous marriage, results in his Nabatean wife leaving. Aretas IV makes plans to avenge himself on Herod, and raises an army for the time of his choosing, which comes six years later.

Tradition: Temple signs begin

John the Baptist put in prision about this time, Mat 4:12; Mark 1:14
← Woman at the well in Samaria, John 4:1-4:54* (4 months till harvest).

Mat 4:13-11:30* ; Luke 4:14-5:39

Luke 6:1, "second first Sabbath" Passover

Mat 12:9-13:58*; Mark 1:14b-6:32; Luke 6:6-8:56*

John 5 (Lewin + 1) is feast of Shavuot

Sejanus executed October 18, AD 3

John the Baptist put to death. Mat 14:1-12. Luke 9:1-9

Feeding of 5000

John 6:4, Passover

The incident of the votive shields. Jos. Ant. 18.55-69. Pilate did this not to abolish Jewish laws, but because he thought it might honor Tiberius and distance him from Sejanus' treason. After this Antipas became his enemy. Pilate's political error is sternly rebuked by Tiberius.

John 7:1-10:21, Tabernacles

Hannukah, John 10:22

Raising of Lazarus, John 11:1-46 ; Yeshua retires to Ephraim

Yeshua returns to Galilee, John 11:47-54; Mat 16-18; Mark 8:11-9:50*; Luke 9:18-50

Yeshua pays temple census tax in Adar, Mat 17:27

Pilate conspires to plunder Temple treasury

Yeshua sets his face to Jerusalem, Luke 9:51. He sends 70 emissaries before himself to 35 different places, and takes a circuitious route to Jerusalem covering many months.

Final Great Missionary Journey

Mat 19....; Mark 10..., Luke 18....

Crucifixion Passover John 11:55

Resurrection Sabbath Mat 28:1

Shavuot: Acts 2

Stephen stoned

Pilate massacres the Samaritans so that Vitellius deposes him.

Jerusalem faithful persecuted

Paul is converted to Messiah

Paul's escape from Damascus.

Aretas IV defeats Herod's army

Tiberius dies 3/16/37 "in the seventy-eighth year of his age and the twenty-third of his reign, on the seventeenth day before the Kalends of April, in the consulship of Gnaeus Acerronius Proculus and Gaius Pontius Nigrinus" (Suetonius/12Caesars/Tiberius#5).

Paul spent three years in Arabia; Gal 1:18.

Paul's visit with Peter

Tradition says Agrippa read theTorah

Cornelius Converted

Caligula's statue injustice carried over, into the planting time (fall 40 BC) when the Jews were again able to plant new crops after the Sabbatical year, disproving Zuckermann's first Sabbatical cycle hypothesis, which falls just when they intended to be planting according to Josephus. Philo refers to Petronius' fears that non-Jewish crops surrounding Ptolemais (regarded as part of Syria) from earlier in the summer might be destroyed by Jews distraught over the proposed defilement of the Temple (*Jos. Ant. 18.272-74 ; Legatio ad Gaium 1:249*). Zuckermann's secondary proposal of the Sabbatical cycle is proved.

famine predicted

Solar Eclipse, Aug. 1, A.D 45 confirms accuracy of consular list and accuracy of Julian Calendar.

T.Annals *6.31-32*

Anno Mundi

Cumanus

Cyprus Journey

Paul stoned/Galatia Evangelized

Jerusalem Council

Claudius Edict expelling Jews from Rome

Acts 18:2: Paul meets Aquila and Priscilla

At Corinth

Acts 18:12

Acts 18:18: many days longer

Paul sails for Syria/Jerusalem: Acts 18:22

Paul travels Asia on his way to Ephesus

Acts 19:8: 3 months

School of Tyrannus 2 years

At Ephesus: 3 years: Acts 20:21

Incitment of Demetrius

Acts 20:3: 3 months in Greece

Acts 20:7: 1st Sabbath Meeting

Paul's arrest

I&II Thessalonians

Galatians?

I&II Corinthians

Romans

Delphi Inscription, 12th Claudius, 26th triumph

Mur 18 Papyri

End of loan term in this Shemittah (seven)

James murdered
threshing floors plundered

Albinus

Florus

First Jewish Revolt Begins

The traditional Jewish destruction year (AD 69) was known to be post-sabbatical, i.e. the first year after the Sabbatical year.

Simon Plunders Idumea of its crops. *Jos. War 4:529-577*

AD 69 was contrived as the traditional Jewish destruction date around AD 140 because it was a post-sabbatical year.

This destruction era was assumed and actually used based on the incorrect destruction date in AD 69 by Jews from the 3rd to 5th century AD.

Dan. 9:26: **Temple destroyed** AD 70

The Second Temple was destroyed on Av 9 according to Rabbi Chalaphta, on a Sunday, when the course of Jehoiarib was on duty. It was On Av 10 according to Jos. Ant. 6:250, the difference being for the time the fire took to do its work. The astronomically calculated Julian date is Sun, August 5 and Mon, Aug 6 respectively, AD 70.

The rule given in the Talmud for determining a Sabbatical year by Rabbi Huna is when adding 1 (to the world era) and dividing by 7 gives an even result (Avodah Zarah 9b). So 3842 + 1 = 3843, and 3843/7 = 549 remainder 0. Since the remainder is 0, then the year is Sabbatic.

Felix

Gallio

Nero

Acts 18:11, 1½ Yr

Acts 24:10 = many years

Acts 24:27 = 2 YR

Jewish Revolt

Anachronistic Hurban

Hurban as it should have been

Era of Alexander

proleptic Jewish Era

Jewish World Era

The *churban era* is anachronistically shown here according to contrived theory of Rabbi Chalaphta (ca. AD 149-160), according to which the temple was destroyed in the post Sabbatical year of AD 69 (3829 AM). It was later discovered that Chalaphta's date for the destruction was incorrect by one year, but history was stuck with the error until about the 12th century. The purple column is the actual (corrected) Churban.

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons	H1	Corrected Hurban
E	Sabbatic Periods		
E	Sabbath Year		

P. Yadin 17, Feb 21, 128 AD.
"In the consulship of Publius Metilius Nepos for the 2nd time and Marcus Annius Libo ten days before the kalends of March, and by the compute of the new province of Arabia year twenty-second on the sixth of the month Dystros, in Maoza, Zoara district, of his own free will and consent Judah son of Eleazar also known as Khthousion, En-gedian, acknowledged to Babatha daughter of Simon, his own wife, ..."; the dating of the Era of Arabia is also confirmed by P. Yadin 14, 15, 16, 18 and 19, 37. The last letter of Babatha (P. Yadin 27) dated to the 27th year of the province of Arabia, and the 19th of August, which is AD 132. Babatha fled from Moaza in the district of Zoara to the fortress of En-gedi after the beginning of the revolt, as the earliest known letter dates from Iyyar 1, 132. See below.

J.T. Milik, one of the chief Dead Sea Scroll scholars, placed the Sabbatical year in 130/131 on the basis of Wadi Murabat 24E. First small local actions of revolt at En-gedi. See Dio Cassius 59:13, 69:13.

Era of Province of Arabia
Era of Bostra or Nabatea

Duration of Revolt: just over 3 1/2

Second Jewish Revolt

Contract years of papMur 24E

Coin years of the Revolt

Earliest letter of the revolt, dated "On Iyyar 1, in year 1 of the Redemption of Israel by Simeon bar Kosiba of Israel" (IEJ, 12, pg. 249). The 1st of Iyyar fell Thu/Fri April 4/5, 132 AD (Yallop Rating "A" astronomically calculated with observed equinoctal sun moving through 270° on March 20, Aviv 14 at sunset).

P. Yadin 27.

Wadi Murabat 24E, dated in winter, year 2 of the revolt. A much larger issue of year 2 coins struck this year.

Years of specified land rental in the Wadi Murabat contract: five years until the Sabbatical year.

There are year 3 coins (and 4), but they are not dated.

Documents dated 28.VIII, Year3 and IX.2 year 3 (IEJ, 12, pp. 250, 255).

Wadi Murabba'at 30, dated 21 Tishri, "year four of the Redemption of Israel." DJD II 124-148.

Fall of Bethar; the Mishnah specifies Av 9 was the date the Romans decreed no Jew should enter Israel. (Taan. 4:6).

Zedekiah	Sabbatic cycle	Jubilee cycle	Exile Years
	4	25	
1	5	26	1
2	6	27	2
3	7	28	3
4	1	29	4
5	2	30	5
6	3	31	6
7	4	32	7

Note: This exercise is only using the chronology as a relative measuring device; The 11th year of Zedekiah actually synchronizes to 587 BC. The exercise was done here because there is no space for it there.

Yose Ben Chalaphta's theory called for the destruction of the 2nd Temple after the year 490[1] from the destruction of the first Temple, which he called **מוצאי שבעית** "going forth of the seventh" in *Seder Olam.* Did he mean the end of the Sabbatical year or the first year of the next cycle? Seder Olam says, "From a bad dog comes no good whelp. Jehoiachin was exiled in the middle of a Jubilee cycle, in the fourth year of a Sabbatical cycle." Now it is well known that Seder Olam interprets Ezekiel 40:1 as a Jubilee.[2] Also we are given 11 years for Zedekiah, Jehoiachin's replacement, and 14 years till the statement in Ezek. 40:1 after the

Years after destruction			
8	5	33	8
9	6	34	9
10	7	35	10
11	1	36	11
1	2	37	12
2	3	38	13
3	4	39	14
4	5	40	15
5	6	41	16
6	7	42	17
7	1	43	18
8	2	44	19
9	3	45	20
10	4	46	21
11	5	47	22
12	6	48	23
13	7	49	24
14	1	1/50	25

destruction. The 4th year of a Sabbatical cycle in the middle of a Jubilee can only be the 25th year. That leaves 25 years, exclusively counted, remaining to the Jubilee. The only way to construct this is if we let Jerusalem be destroyed in the first year of the cycle. Test this: if the exile is backed up one year, then the 25th year will not be the Jubilee. If the destruction is backed up one year by shifting Zedekiah's reign upward, then a gap opens between the destruction and the first of the 14 years to the year of Jubilee.

The Seder Olam chronology is, of course, contrived (The first temple was destroyed in 587 BC), but this exercise does show what meaning that Rabbi Chalaphta put on the words **מוצאי שבעית**. Clearly, they mean a post Sabbatical year. Since the year in question is AD 69, AD 67/68 is Sabbatic.

---

1. The first destruction is included in the count, but the second destruction is not. This way 70 sabbatical periods fit into 490 years (inclusively counting) from the first destruction to the second destruction (excluded from the count). The Rabbis avoid speaking of 490 years (an obvious reference to Daniel 9) by splitting the number into 70 years of exile and 420 years of the temple being built. The first temple they say is destroyed in year 1 and rebuilt in year 71. It stands (inclusively counted) from year 71 to year 490 (490-71+1 = 420). So they speak of the second temple standing for 420 years, and then being destroyed in the 421st year (R. TAM and TOSAFISTS). This way the connection to Daniel 9 is obscured.

2. The Rabbis interpret the reference to "head of the year" (Rosh Hashanah) on the 10th day of the month as a reference to the Jubilee, since this is when the Jubilee trumpet is sounded. However, two factors make this chronology impossible. First, Seder Olam subtracted exactly 165 years from history to reduce the period from the first destruction up to the second destruction to 490 years. It will be found that restoring these years, keeping AD 69 post-sabbatical, and making Ezekiel 40:1 a Jubilee 14 years after either a 587 BC or 586 BC destruction is logically impossible. Since AD 69 is a post Sabbatic year, Ezekiel 40:1 cannot be a Jubilee. Second, "Rosh Hashanah" is meant to mean "beginning of the the year" in the vauge sense of the first part of it. 10 Tishri is part of the beginning of the year. Since this is true of every year, Ezekiel 40:1 does not need to refer to a Jubilee.

Anni Mundi	Adam
1	0
2	1
3	2
4	3
5	4
6	5
7	6

Seder Olam Rabba, like most chronologies, mistakenly equates Adam at age 1 with the first year of the world. The nth age of a person is counted after the nth year is completed. The mistake is obvious because *SO* places the birth of Seth in ***Anni Mundi Judaici*** 130, and the birth of Noah in 1056 (*Seder Olam Zuta*). Seth was truly born in A.M. 131, and Noah in A.M. 1057. For we must take account of a whole year before Adam is age 1, which is labeled 0. We see then that age 6 of Adam is the 7th year of the world, which is sabbatic.[1] By mistakenly counting Adam age 1 = A.M. 1 Seder Olam Zuta ends up with 3828 as the destruction of the 2nd Temple. One year has been omitted. If the omitted year is not restored then 3828 MOD 7 = 6[2], i.e. 3828 cannot be sabbatic or post sabbatical as required by the construction of Seder Olam. To correct this we must take account of 1 year before the year 1 A.M. Thus (3828 + 1) MOD 7 = 0, and 3828 is sabbatic (AD 67/68).

The Rabbis disagree with themselves about whether the destruction was in a Sabbatical or post Sabbatical year, but as I have demonstrated above that *Seder Olam* is constructed on the basis of it being post Sabbatical. This adds one year. So our modulus equation now becomes (3828 +1 +1) MOD 7 = 1, or (3829 + 1) MOD 7 = 1. Seder Olam sets the destruction of the 2nd Temple in 3829 (AD 69), and AD 68/69 is post Sabbatical.

The necessity of adding a year before the first year of ***Anni Mundi Judaici*** is the basis of Rabbi Huna's rule for adding 1 to determine if a year is Sabbatical.[3]

---

1. Since creation was in the spring, the Sabbatic year will end in the fall of the 6th year of Adam.
2. The MOD (for modulus) operator returns the remainder after division.
3. When it was discovered that the 2nd Temple was really destroyed in AD 70, Huna's rule was discarded and replaced by the rule: (Anno Seleucid−2) MOD 7. This is called a "Siman" in the Talmud (a cipher). Nedarim 61, Rishonim, #8, "Answer (R. Tam): The Siman [Cipher] teaches to deduct two years or add five, like the Seifa "v'Od Chamesh Shanim..." We count from when Yavan began to rule the world, in year 41 of Bayis Sheni. Their third year was (year 43, i.e.) Shemitah according to R. Yehudah, therefore we must deduct two. The year 5011 or 5012 was Shemitah, depending on whether the Churban was in year 420 or 421." Thus there are now two rules and two Sabbatical cycles. But the second one is clearly due to the Rabbis who 1. want to correct the date of the destruction to AD 70, but 2. do not want to discard the belief that the temple was destroyed in a post-Sabbatical year. The real solution is to keep the orginal Sabbath year cycle, correct the date to AD 70, and discard the notion that it was a post Sabbatical year. This means dicarding Rabbi Chalaphta's false theory of Daniel 9 altogether.

"6. Answer #2 (Drishah CM 67:9): The Ri can say that Bayis Sheni stood 420 full years. We count 172 years from the Churban until 4000 because part of a year (from Tish'ah b'Av until the end of Elul) is like a full year." (the part year here is 9 Av to Tishri 1 AD 69).

"4. Question (Rosh and Tosfos): R. Chanina said that Moshi'ach will come 400 years after the Churban. A Beraisa said that he will come in the year 4231. The Gemara said that these are three years apart. If the Churban was in year 421 (3829) they would be only two years apart! Throughout Shas, including the calculation of Shemitah nowadays, we say that Bayis Sheni stood only 420 years! Also, **if so the year 4000 was 172 years** after the Churban, not 171!
i. Pilpulei Charifta (40): **Rashi said that Seder Olam says that it was 172 years later**. (**Tosfos says that 'everyone says so.'**)"

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

An example of miscounting typical of scholars. I am going to use an actual example here from An Album of Dated Syriac Manuscripts, by William Hatch, 2002, page 66. "An. Bostrenorum 427. The era of Bostra, whch was also known as the Arabian or the Damascene era, began on March 22, 105 A.D. See. F.K. Ginzel..." At the top of page 66, "PLATE XV 532 AD"; A second example will be from, *The Quraean in its Historical Context, 2007,* by Reynolds, "the era of Arabia would, which began in 105 CE ....dated is Figure 10, which says it was written in the year 350, which in the era of Arabia would correspond to 455 CE." (page 63). It is now known from the Babatha archive that the era of Arabia dates from March 22, AD 106, one year later than stated here, so the calculations accidentally come out to the right dates. Let us see if they were legitimately obtained on the assumption stated that the era of Arabia started in AD 105. The first number is obtained by 105 + 427 = 532 AD. The second number is obtained by 105 + 350 = 455 CE. This simple addition of *Era Years Elapsed* to the *Era starting date* is the most fundamental error that chronologists and scribes commonly make. Let us now analyse the numbers properly:

AD 105/106 = Year 1 Era of Arabia
+426 +426
_____
AD 531/532 = Year 427 of Arabia

AD 105/106 = Year 1 Era of Arabia
+349 +349
_____
AD 454/455 = Year 350 Era of Arabia

Since the era began on March 22, we see that the era is 9 months and some days in 531, and 9 months and some days in 454, and only 3 months and some days in 532 and 455 respectively. Both respective authors stated the dates as 532 and 455. If they are to round the year to the nearest year they should have stated 531 and 454. The error can be avoided by charting out the years, but who takes the trouble to do this? Careful scholars will take the time to think through the inclusiveness or exclusiveness of the counting. The trouble is there are a lot of careless scholars who simply add and subtract without thinking.

"**Ancient World's Largest Cemetery Identified at Biblical Zoar (Ancient Zoora).** At the southeastern end of the Dead Sea, nestled between the salt-encrusted shores of the sea and the dark, foreboding slopes of the Transjordanian

highlands, lies Biblical Zoar (ancient Zoora or Zoara). According to the Bible and early Christian tradition, Lot and his daughters escaped to Zoar (Zoora) after the destruction of Sodom and Gomorrah...Here more than 5,000 ancient burials from the first century B.C. to the fourth century A.D. have been identified. Around the same time, Jewish families were also moving into the region of Zoar (Zoora) and purchasing date orchards and farms. Scores of later Jewish tombstones found at Zoar (Zoora) attest to the Jewish community's continued presence in the region throughout late antiquity.

During the Byzantine period (fourth–sixth centuries A.D.), Zoar (Zoora) became the center of a thriving Christian community. Local Christians built an impressive monastery to commemorate the cave where they believed Lot and his daughters had found refuge during the destruction of Sodom and Gomorrah. The town was even the site of a major Christian bishopric. As such, it is no surprise that hundreds of ancient burials and Greek-inscribed Christian tombstones have been found at Byzantine Zoora." (biblicalarchaeology.org, 02/28/2012, Biblical Archaeology Society Staff).

About 10% of the gravestones are Jewish testifying that the Jews of this period lived in the midst of Christians. The Jewish gravestones are dated in the era of the Churban (years from the destruction of the 2nd Temple), the year in the Sabbatical year, and the current date of the Jewish calendar. The first day of months was according to the visible sighted new moon, and most of the dates place the 15th of Aviv on or after the spring equinox. Many of the gravestones even have the day of the week upon which the deceased died, which allows us to astronomical date and astronomically cross check the sabbatic periods and the era of the *Churban*. To be sure, archaeology is a messy science, replete with disagreements even among professional archaeologists, but general trend of the data sifted from Zoar does not support Zuckermann's sabbatical cycle, nor does it support the notion that the Jews of this period started their months from the conjunction. At best there are a few cases of a Rabbinical Calendar type reckoning, but the dates reflecting this may be attributed to the particular school of Jewish thought (or denomoniation) that the deceased belonged to. The Rabbinical Calendar had by no means at this time period won the day.

Greek Portion (A Zoar Tombstone Inscription).

The grave of Mousios Son of Marsas who, having completed the year [?] of his life, died in the year 253; let him fare well!

Aramaic part:

This is the grave of Mousios son of Marsa, who died in the third year of the Sabbatical cycle, in the month of Kislev, on the twenty-seventh day of it, which is the year 290 after the destruction of the temple

Era of Province of Arabia: 252, 253, 254

Era of Alexander (Selecid): 669, 670, 671

357, 358

The Era of Arabia, or Bostra, or Anni Bostrenorum began on March 22, AD 106. The bilingual dates in this funerary inscription are discrepant. The scribe has year 253 Era Arabia (in actual use at the time), and a Roman date corresponding to 27 Kislev. First he converts the date to Anno Seleucid 670 (which is in actual use at the time). Then he subtracts the date of the Temple destruction AS 380 (Rabbi Pappa), 670−380 = 290. He assumes he did his arithemtic right, thinking AS 670 corresponds to *Churban* year 290. He discovers the Sabbatic cycle year the usual way: 290 MOD 7 = 3. But he has made the most common of trivial errors that even modern scholars are commonly prone to make: **subtraction fails to count inclusively**. For example 17−13 = 4, but if the end points are to be counted (17 and 13), then the answer should be 5, because the years are {17, 16, 15, 14, 13} = 5. Thus one must add 1 to count the end points. 670-380 + 1 = 291. And 291 MOD 7 = 4. The scribe should have written the 4th year of a sabbatic period and year 291 of the *Churban*.

Z138, Churban 303 = Sab cycle 2

Z254, Chuban 318, Sab cycle 2, emmend to 317 per Stern.

391, 392

*discrepant

703

From Sacha Stern N7: 3 Iyyar, Mon, 323 Churban, 1 Sab cycle. The scribe either miscomputed the Hurban Era: (AS 703 - AD 380 = 323). The correct calculation was 703-380+1=324. And 324 mod 7 = 2. Or he put down the wrong weekday.

Legend

A A.D. Years

E Jubilee Year

B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year

T1	Jewish World Era
S2	Era of the Greeks
G2	Proleptic Hurban

N9, Churban 338, Sab Cycle 2

N2, Churban 346, Sab Cycle 3

N12, Churban 346, Sab Cycle 3

N5, Churban 35(7), Sab Cycle 7

From Sacha Stern Z144
Churban: 3(6)1 = 4th year of Shemittah = Tuesday (see note g), 16 Tevet.
Jan 8, 429.e+0= Tuesday 16 Tevet. (The year is intercalated by the δ=0 equinox.) Perfect match.

match

From Sacha Stern N10 = Z315 (The Churban date or Shemittah date must be corrected.)
"This is the nefesh of Mehirsha daughter of the *haver* Marsa, who died on the fifth day, 17 days into the month of Elul, the fourth year of *Shemitah*, 362 years after the destruction of the Temple. Let her rest in peace. Shalom. Shalom. Shalom. Shalom" (The 17th of Elul was on THU in AD 429). Emmend 362 to 361.

match

N1, Churban 364 (+1), Sab Cycle 1

AD 437.b+0, Feb 27th = Sabbath, Nisan 5. "This is the tombstone (*nafsha*) of Hannah daughter of Ha[nie?] the priest, who died on the Sabbath, the first festival day (*yoma tava*) of Passover, the fifth day of the month of Nissan, in the fifth year of the sabbatical [cycle], which is the year three hundred and sixty-nine years since the destruction of the Temple. Peace. May her soul rest. Peace" (Misgav). The inscription is self contradictry. The fifth day should read 15th day, and the date would be 7/8 April, AD 437.e+0.

match

From Sacha Stern N4 Churban 386 = Yr 1, Tevet 25, Sabbath = AD 453.b+0, Dec 12, Sabbath. (Navevh, 1985, 1995). (This year failed to keep Adar II on time with Nisan 15 only 4 days before the equinox). Perfect Match. "This is the soul of..son of Migalus, who died on the day of the Sabbath, on the twenty-fifth day of the month of Tevet, first year of the sabbatical cycle, 386 after the destruction of the Temple. Peace. Peace be on Israel."

match

From Sacha Stern S14 398 churban, 20 Elul, THU, Sab cycle 5. Correct Sabb cycle to 6 per N11. The date then is Aug 18, AD 466 = Ellul 20, Thursday.

match

Stern, N11, Churban Year 398, Sabbath Cycle 6; Fri, 3 Kislev. The Weekday is discrepant. Match to 465.

discrepant

From Sacha Stern S15 = Z308, Thu, 6 Nisan, 400 Churban, cycle 7, emmend 399. 29 March 467.e+0 AD = 5th day of week by Jewish reckoning after sunset = Nisan 6 using Temple day. (Postpone Adar 1 day so that it is 30 days). Or postpone 1 month to April 27.

discrepant

Churban Era 400 is three years different from *AM 4231*. Thus 4231 - 3 = AM 4228. 4228 synchronizes with Churban Era 400. The large number of funerary inscriptions reflects increased Jewish pilgrimage to Zoar and messianic speculation surrounding the Jubilee year.

Z88, Churban 399, Sab Cycle 7

3	
2	
1	

1. This is the tombstone of Hannah, daughter of
2. Levi, who died on Thursday
3. on the nineteenth day of the month of
4. Sivan, in the third year of the Sabbatical [cycle],
5. year...four hundred and two
6. years since the destruction of the Temple.
7. Peace upon Israel. Peace. (Stern, Z312). THU, 19 Sivan, 3 Sab, 402 Chur

The date corresponds to Thursday, May 7, AD 470.b+0, the 3rd month. The year was intercalated 13 days before the spring equinox here, substantiating the charge that the Jews sometimes put the first month too early.

S16 (Z306) 10 Heshvan, Mon, *Churban* 406 (emmed to cycle year #1,

i.e. 407) , 1 Sab, Matches Monday AD 474, 7 October. 10 Heshvan is Mon, 7 October to Tue, 8 October.

1. as in Sacha Stern's book.

"Here rests the *nefesh* of Yose son of Ufi who died in the city of Tefar in the land of the Himyarites and left for the land of Israel and was buried on the sixth day, on the 29th of the month of Tamuz, the first year of the *Shemitah* which is also the 400(?)th[1] year from the destruction of the Temple. Shalom. Shalom on you as you lie here."

1. Correct 400(?) to 407 Churban. Matched to Friday, June 20, AD 475. The year was intercalated 9 days before the spring equinox, missing an Adar II that spring.

N17, Churban 433, Sab Cycle 6

match

"May the soul rest of Halifo the daughter [of...] who died on Tuesday, the eleventh day of the month of Elul, the year [....][1] of Shemitah, which is the year four hundred and thirty and five years after the Hurban of the House of the Temple, Peace to Israel, Peace!" (Sukenik Inscription C). Stern N3 Churban 435 is year 1 of the Sabbatical cycle in both Zuckermann and my cycle, so the missing year of the cycle is the same in both cases. The date is Tuesday AD 503, 19 AUG, between sunset and midnight. The 11th of Elul was sunset 19 AUG to sunset 20 AUG.

match

"May the soul of Hasadiah the Priest son of Dematin rest, who died on Thursday, the fifth of Av, in the fourth year of the sabbatical cycle, which is the year four hundred and forty-five after the destruction of the Temple. Peace on Israel. Peace." *Churban* 445, THU, 5 Av.
= AD 513, July 24, 5th of Av Wed (died Wed night, regarded as the 5th day of the week).

Summary:

Text	Year	date		Churban	Cycle	Day	Month	Remarks
Bilingual Era of Arabia	357	11/27		290	3	27	Kislev	Scribal Error
N7	392	4/12	M	323	1	3	Iyyar	Scribal Error
Z144	429	1/8	T	361	4	16	Tevet	Gregg
N10 = Z315	429	9/4	W	362	4	17	Elull	Gregg
N4	453	12/12	Sa	386	1	25	Tevet	Gregg, early Passover
N11	466	9/30	F	398	6	3	Kislev	Scribal Error
S14	466	8/18	R	398	5 (6)	20	Elul	Gregg
Z88	467	12/5	T	399	7	21	Tevet	Scribal Error
S15	467	4/27	R	400(399)	7	6	Nisan	Gregg
Z312	470	5/7	R	402	3	19	Sivan	Gregg/early Passover
S16	474	10/7	M	407	1	10	Heshvan	Gregg
N3	503	8/19	M	434	1	11	Elul	Gregg
Hasadiah the Priest	513	7/24	W	445	4	5	Av	Gregg

Stats: 4 texts attributed to Scribal error. 9 texts agreeing with the charted Sabbatical cycle. 7 texts agreeing with the equinox rule, and 2 having an early Passover, and all texts synchronized to the sighted new moon rather than the conjunction (except the ones labeled "scribal error").

It is not necessary to explain all the scribal errors. What it means is these texts are discrepant. If anyone undertakes an analysis using sabbatic cycles other than those in this chart they will find a much higher percentage of discrepancies in the data. I have assumed Sacha Stern's conclusion that Wacholder's cycle is more discrepant than his own with the data, and have done my own due analysis finding Stern's analysis more discrepant than my own. Stern's analysis concluded, "It is evident, indeed, that the beginning of the month at Zoar was completely erratic" (pg. 146, Calendar and Community). I do not find this. Except for the 4 discrepant texts (which could be wrong for any number of other reasons), I find all the other texts to agree closely with a sighted new moon. The ratio of discrepant texts to those agree with the sighted moon is 4 to 9. Stern also concluded that there was no hint of following the equinox rule in the data. I find differently, that 7 cases out of 9 agree with the equinox rule, which I believe is sufficent to conclude that the Zoar community in theory wanted their calendar to agree with the equinox, but sometimes it did not, tending to be too early. Being too early is indicative of missing an Adar II intercalation.

After doing the analysis, I believe the reason Stern did not detect the right cycle is simply because he did not analyze the right cycle. That seems easier to believe at the current time. The reason for neglecting this analysis is because the sabbatical cycle here is traditionally ascribed to Seder Olam, which is dismissed because it misdates the destruction of the second temple. While it is parsimonious to dismiss Seder Olam's date for the destruction of the Temple, it is not parsimonious to dismiss the sabbatical periods which it assumes. The evidence is that the correct timing of the Sabbatical periods remained intact at least to the 5th century.

Legend

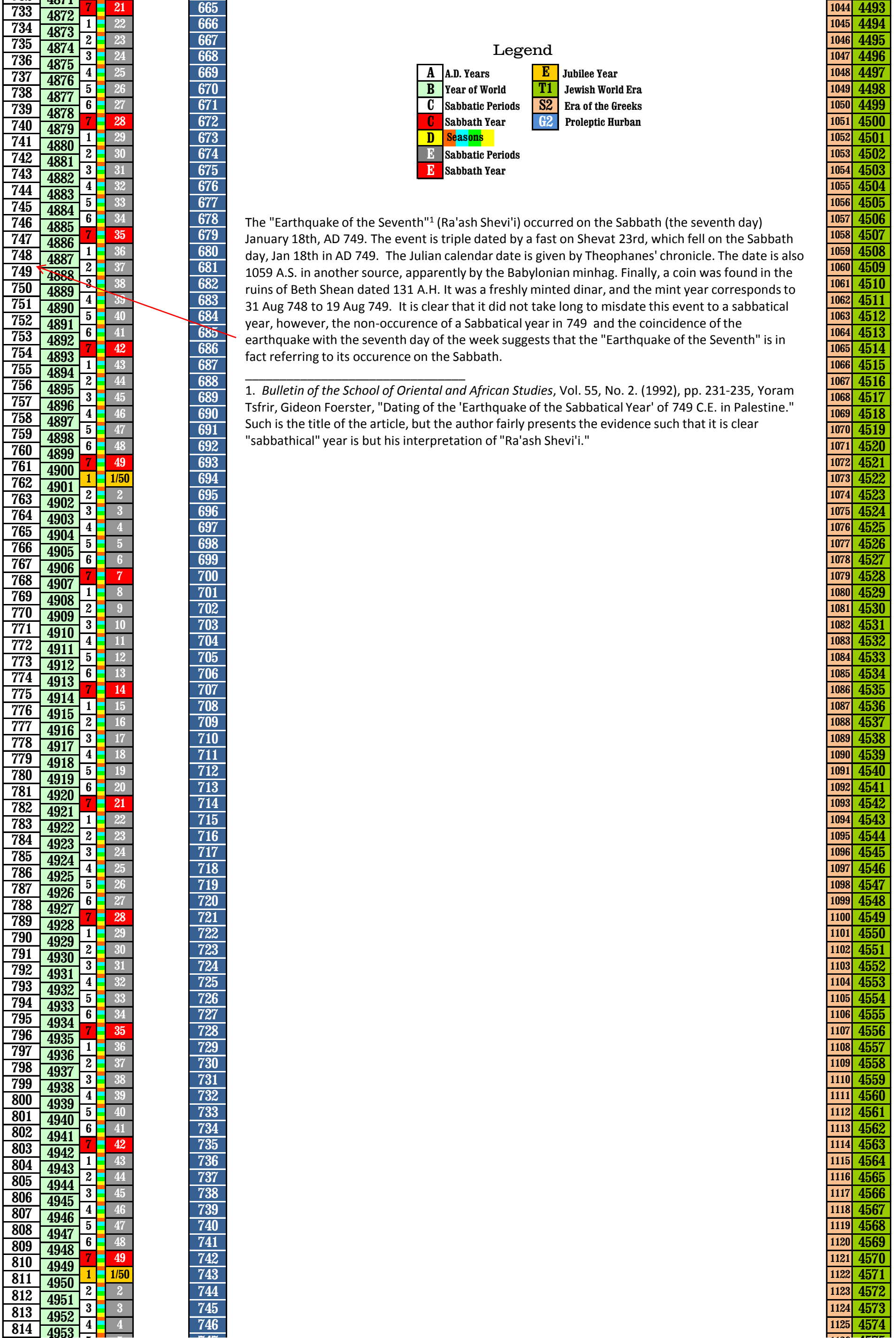
A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons		

| | | |

Legend

A	A.D. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
T1	Jewish World Era
S2	Era of the Greeks
G2	Proleptic Hurban

651	4790	3	38	584	963	4412
652	4791	4	39	585	964	4413
653	4792	5	40	586	965	4414
654	4793	6	41	587	966	4415
655	4794	7	42	588	967	4416
656	4795	1	43	589	968	4417
657	4796	2	44	590	969	4418
658	4797	3	45	591	970	4419
659	4798	4	46	592	971	4420
660	4799	5	47	593	972	4421
661	4800	6	48	594	973	4422
662	4801	7	49	595	974	4423
663	4802	1	1/50	596	975	4424
664	4803	2	2	597	976	4425
665	4804	3	3	598	977	4426
666	4805	4	4	599	978	4427
667	4806	5	5	600	979	4428
668	4807	6	6	601	980	4429
669	4808	7	7	602	981	4430
670	4809	1	8	603	982	4431
671	4810	2	9	604	983	4432
672	4811	3	10	605	984	4433
673	4812	4	11	606	985	4434
674	4813	5	12	607	986	4435
675	4814	6	13	608	987	4436
676	4815	7	14	609	988	4437
677	4816	1	15	610	989	4438
678	4817	2	16	611	990	4439
679	4818	3	17	612	991	4440
680	4819	4	18	613	992	4441
681	4820	5	19	614	993	4442
682	4821	6	20	615	994	4443
683	4822	7	21	616	995	4444
684	4823	1	22	617	996	4445
685	4824	2	23	618	997	4446
686	4825	3	24	619	998	4447
687	4826	4	25	620	999	4448
688	4827	5	26	621	1000	4449
689	4828	6	27	622	1001	4450
690	4829	7	28	623	1002	4451
691	4830	1	29	624	1003	4452
692	4831	2	30	625	1004	4453
693	4832	3	31	626	1005	4454
694	4833	4	32	627	1006	4455
695	4834	5	33	628	1007	4456
696	4835	6	34	629	1008	4457
697	4836	7	35	630	1009	4458
698	4837	1	36	631	1010	4459
699	4838	2	37	632	1011	4460
700	4839	3	38	633	1012	4461
701	4840	4	39	634	1013	4462
702	4841	5	40	635	1014	4463
703	4842	6	41	636	1015	4464
704	4843	7	42	637	1016	4465
705	4844	1	43	638	1017	4466
706	4845	2	44	639	1018	4467
707	4846	3	45	640	1019	4468
708	4847	4	46	641	1020	4469
709	4848	5	47	642	1021	4470
710	4849	6	48	643	1022	4471
711	4850	7	49	644	1023	4472
712	4851	1	1/50	645	1024	4473
713	4852	2	2	646	1025	4474
714	4853	3	3	647	1026	4475
715	4854	4	4	648	1027	4476
716	4855	5	5	649	1028	4477
717	4856	6	6	650	1029	4478
718	4857	7	7	651	1030	4479
719	4858	1	8	652	1031	4480
720	4859	2	9	653	1032	4481
721	4860	3	10	654	1033	4482
722	4861	4	11	655	1034	4483
723	4862	5	12	656	1035	4484
724	4863	6	13	657	1036	4485
725	4864	7	14	658	1037	4486
726	4865	1	15	659	1038	4487
727	4866	2	16	660	1039	4488
728	4867	3	17	661	1040	4489
729	4868	4	18	662	1041	4490
730	4869	5	19	663	1042	4491
731	4870	6	20	664	1043	4492



The "Earthquake of the Seventh"[1] (Ra'ash Shevi'i) occurred on the Sabbath (the seventh day) January 18th, AD 749. The event is triple dated by a fast on Shevat 23rd, which fell on the Sabbath day, Jan 18th in AD 749. The Julian calendar date is given by Theophanes' chronicle. The date is also 1059 A.S. in another source, apparently by the Babylonian minhag. Finally, a coin was found in the ruins of Beth Shean dated 131 A.H. It was a freshly minted dinar, and the mint year corresponds to 31 Aug 748 to 19 Aug 749. It is clear that it did not take long to misdate this event to a sabbatical year, however, the non-occurence of a Sabbatical year in 749 and the coincidence of the earthquake with the seventh day of the week suggests that the "Earthquake of the Seventh" is in fact referring to its occurence on the Sabbath.

---

1. *Bulletin of the School of Oriental and African Studies*, Vol. 55, No. 2. (1992), pp. 231-235, Yoram Tsfrir, Gideon Foerster, "Dating of the 'Earthquake of the Sabbatical Year' of 749 C.E. in Palestine." Such is the title of the article, but the author fairly presents the evidence such that it is clear "sabbathical" year is but his interpretation of "Ra'ash Shevi'i."

A	B	C	C	D	E
815	4954	5	5	747	1126
816	4955	6	6	748	1127
817	4956	7	7	749	1128
818	4957	1	8	750	1129
819	4958	2	9	751	1130
820	4959	3	10	752	1131
821	4960	4	11	753	1132
822	4961	5	12	754	1133
823	4962	6	13	755	1134
824	4963	7	14	756	1135
825	4964	1	15	757	1136
826	4965	2	16	758	1137
827	4966	3	17	759	1138
828	4967	4	18	760	1139
829	4968	5	19	761	1140
830	4969	6	20	762	1141
831	4970	7	21	763	1142
832	4971	1	22	764	1143
833	4972	2	23	765	1144
834	4973	3	24	766	1145
835	4974	4	25	767	1146
836	4975	5	26	768	1147
837	4976	6	27	769	1148
838	4977	7	28	770	1149
839	4978	1	29	771	1150
840	4979	2	30	772	1151
841	4980	3	31	773	1152
842	4981	4	32	774	1153
843	4982	5	33	775	1154
844	4983	6	34	776	1155
845	4984	7	35	777	1156
846	4985	1	36	778	1157
847	4986	2	37	779	1158
848	4987	3	38	780	1159
849	4988	4	39	781	1160
850	4989	5	40	782	1161
851	4990	6	41	783	1162
852	4991	7	42	784	1163
853	4992	1	43	785	1164
854	4993	2	44	786	1165
855	4994	3	45	787	1166
856	4995	4	46	788	1167
857	4996	5	47	789	1168
858	4997	6	48	790	1169
859	4998	7	49	791	1170
860	4999	1	1/50	792	1171
861	5000	2	2	793	1172
862	5001	3	3	794	1173
863	5002	4	4	795	1174
864	5003	5	5	796	1175
865	5004	6	6	797	1176
866	5005	7	7	798	1177
867	5006	1	8	799	1178
868	5007	2	9	800	1179
869	5008	3	10	801	1180
870	5009	4	11	802	1181
871	5010	5	12	803	1182
872	5011	6	13	804	1183
873	5012	7	14	805	1184
874	5013	1	15	806	1185
875	5014	2	16	807	1186
876	5015	3	17	808	1187
877	5016	4	18	809	1188
878	5017	5	19	810	1189
879	5018	6	20	811	1190
880	5019	7	21	812	1191
881	5020	1	22	813	1192
882	5021	2	23	814	1193
883	5022	3	24	815	1194
884	5023	4	25	816	1195
885	5024	5	26	817	1196
886	5025	6	27	818	1197
887	5026	7	28	819	1198
888	5027	1	29	820	1199
889	5028	2	30	821	1200
890	5029	3	31	822	1201
891	5030	4	32	823	1202
892	5031	5	33	824	1203
893	5032	6	34	825	1204
894	5033	7	35	826	1205
895	5034	1	36	827	1206
896	5035	2	37	828	1207

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons		
E	Sabbatic Periods		

897	5036	4	39	830		1209	4658
898	5037	5	40	831		1210	4659
899	5038	6	41	832		1211	4660
900	5039	7	42	833		1212	4661
901	5040	1	43	834		1213	4662
902	5041	2	44	835		1214	4663
903	5042	3	45	836		1215	4664
904	5043	4	46	837		1216	4665
905	5044	5	47	838		1217	4666
906	5045	6	48	839		1218	4667
907	5046	7	49	840		1219	4668
908	5047	1	1/50	841		1220	4669
909	5048	2	2	842		1221	4670
910	5049	3	3	843		1222	4671
911	5050	4	4	844		1223	4672
912	5051	5	5	845		1224	4673
913	5052	6	6	846		1225	4674
914	5053	7	7	847		1226	4675
915	5054	1	8	848		1227	4676
916	5055	2	9	849		1228	4677
917	5056	3	10	850		1229	4678
918	5057	4	11	851		1230	4679
919	5058	5	12	852		1231	4680
920	5059	6	13	853		1232	4681
921	5060	7	14	854		1233	4682
922	5061	1	15	855		1234	4683
923	5062	2	16	856		1235	4684
924	5063	3	17	857		1236	4685
925	5064	4	18	858		1237	4686
926	5065	5	19	859		1238	4687
927	5066	6	20	860		1239	4688
928	5067	7	21	861		1240	4689
929	5068	1	22	862		1241	4690
930	5069	2	23	863		1242	4691
931	5070	3	24	864		1243	4692
932	5071	4	25	865		1244	4693
933	5072	5	26	866		1245	4694
934	5073	6	27	867		1246	4695
935	5074	7	28	868		1247	4696
936	5075	1	29	869		1248	4697
937	5076	2	30	870		1249	4698
938	5077	3	31	871		1250	4699
939	5078	4	32	872		1251	4700
940	5079	5	33	873		1252	4701
941	5080	6	34	874		1253	4702
942	5081	7	35	875		1254	4703
943	5082	1	36	876		1255	4704
944	5083	2	37	877		1256	4705
945	5084	3	38	878		1257	4706
946	5085	4	39	879		1258	4707
947	5086	5	40	880		1259	4708
948	5087	6	41	881		1260	4709
949	5088	7	42	882		1261	4710
950	5089	1	43	883		1262	4711
951	5090	2	44	884		1263	4712
952	5091	3	45	885		1264	4713
953	5092	4	46	886		1265	4714
954	5093	5	47	887		1266	4715
955	5094	6	48	888		1267	4716
956	5095	7	49	889		1268	4717
957	5096	1	1/50	890		1269	4718
958	5097	2	2	891		1270	4719
959	5098	3	3	892		1271	4720
960	5099	4	4	893		1272	4721
961	5100	5	5	894		1273	4722
962	5101	6	6	895		1274	4723
963	5102	7	7	896		1275	4724
964	5103	1	8	897		1276	4725
965	5104	2	9	898		1277	4726
966	5105	3	10	899		1278	4727
967	5106	4	11	900		1279	4728
968	5107	5	12	901		1280	4729
969	5108	6	13	902		1281	4730
970	5109	7	14	903		1282	4731
971	5110	1	15	904		1283	4732
972	5111	2	16	905		1284	4733
973	5112	3	17	906		1285	4734
974	5113	4	18	907		1286	4735
975	5114	5	19	908		1287	4736
976	5115	6	20	909		1288	4737
977	5116	7	21	910		1289	4738
978	5117	1	22	911		1290	4739

E Sabbath Year

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

979	5118	2	23	912		1291	4740
980	5119	3	24	913		1292	4741
981	5120	4	25	914		1293	4742
982	5121	5	26	915		1294	4743
983	5122	6	27	916		1295	4744
984	5123	7	28	917		1296	4745
985	5124	1	29	918		1297	4746
986	5125	2	30	919		1298	4747
987	5126	3	31	920		1299	4748
988	5127	4	32	921		1300	4749
989	5128	5	33	922		1301	4750
990	5129	6	34	923		1302	4751
991	5130	7	35	924		1303	4752
992	5131	1	36	925		1304	4753
993	5132	2	37	926		1305	4754
994	5133	3	38	927		1306	4755
995	5134	4	39	928		1307	4756
996	5135	5	40	929		1308	4757
997	5136	6	41	930		1309	4758
998	5137	7	42	931		1310	4759
999	5138	1	43	932		1311	4760
1000	5139	2	44	933		1312	4761
1001	5140	3	45	934		1313	4762
1002	5141	4	46	935		1314	4763
1003	5142	5	47	936		1315	4764
1004	5143	6	48	937		1316	4765
1005	5144	7	49	938		1317	4766
1006	5145	1	1/50	939		1318	4767
1007	5146	2	2	940		1319	4768
1008	5147	3	3	941		1320	4769
1009	5148	4	4	942		1321	4770
1010	5149	5	5	943		1322	4771
1011	5150	6	6	944		1323	4772
1012	5151	7	7	945		1324	4773
1013	5152	1	8	946		1325	4774
1014	5153	2	9	947		1326	4775
1015	5154	3	10	948		1327	4776
1016	5155	4	11	949		1328	4777
1017	5156	5	12	950		1329	4778
1018	5157	6	13	951		1330	4779
1019	5158	7	14	952		1331	4780
1020	5159	1	15	953		1332	4781
1021	5160	2	16	954		1333	4782
1022	5161	3	17	955		1334	4783
1023	5162	4	18	956		1335	4784
1024	5163	5	19	957		1336	4785
1025	5164	6	20	958		1337	4786
1026	5165	7	21	959		1338	4787
1027	5166	1	22	960		1339	4788
1028	5167	2	23	961		1340	4789
1029	5168	3	24	962		1341	4790
1030	5169	4	25	963		1342	4791
1031	5170	5	26	964		1343	4792
1032	5171	6	27	965		1344	4793
1033	5172	7	28	966		1345	4794
1034	5173	1	29	967		1346	4795
1035	5174	2	30	968		1347	4796
1036	5175	3	31	969		1348	4797
1037	5176	4	32	970		1349	4798
1038	5177	5	33	971		1350	4799
1039	5178	6	34	972		1351	4800
1040	5179	7	35	973		1352	4801
1041	5180	1	36	974		1353	4802
1042	5181	2	37	975		1354	4803
1043	5182	3	38	976		1355	4804
1044	5183	4	39	977		1356	4805
1045	5184	5	40	978		1357	4806
1046	5185	6	41	979		1358	4807
1047	5186	7	42	980		1359	4808
1048	5187	1	43	981		1360	4809
1049	5188	2	44	982		1361	4810
1050	5189	3	45	983		1362	4811
1051	5190	4	46	984		1363	4812
1052	5191	5	47	985		1364	4813
1053	5192	6	48	986		1365	4814
1054	5193	7	49	987		1366	4815
1055	5194	1	1/50	988		1367	4816
1056	5195	2	2	989		1368	4817
1057	5196	3	3	990		1369	4818
1058	5197	4	4	991		1370	4819
1059	5198	5	5	992		1371	4820
1060	5199	6	6	993		1372	4821
1061	5200						

Legend

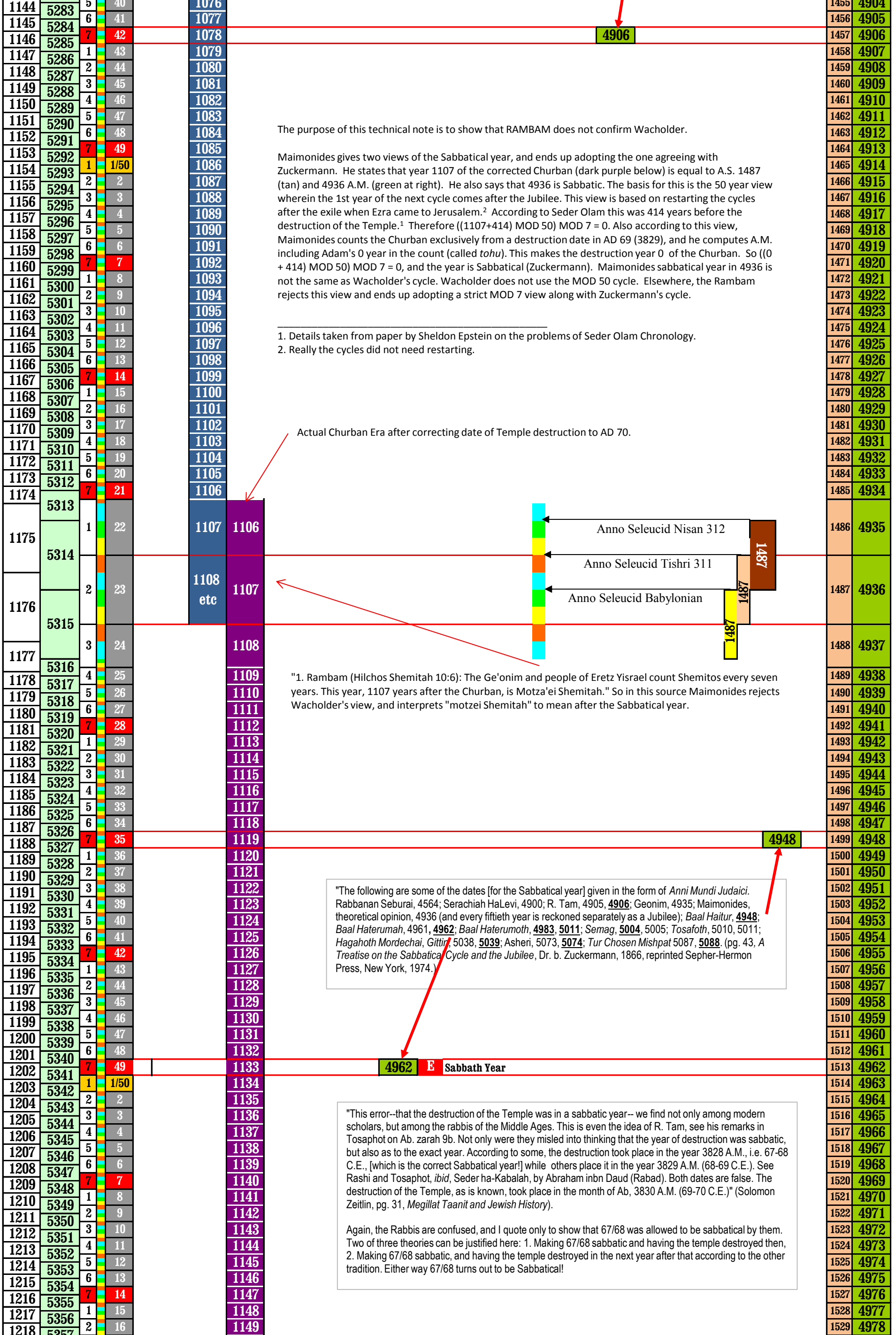
A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

1062	5201	7	7	994		1373	4822
1063	5202	1	8	995		1374	4823
1064	5203	2	9	996		1375	4824
1065	5204	3	10	997		1376	4825
1066	5205	4	11	998		1377	4826
1067	5206	5	12	999		1378	4827
1068	5207	6	13	1000		1379	4828
1069	5208	7	14	1001		1380	4829
1070	5209	1	15	1002		1381	4830
1071	5210	2	16	1003		1382	4831
1072	5211	3	17	1004		1383	4832
1073	5212	4	18	1005		1384	4833
1074	5213	5	19	1006		1385	4834
1075	5214	6	20	1007		1386	4835
1076	5215	7	21	1008		1387	4836
1077	5216	1	22	1009		1388	4837
1078	5217	2	23	1010		1389	4838
1079	5218	3	24	1011		1390	4839
1080	5219	4	25	1012		1391	4840
1081	5220	5	26	1013		1392	4841
1082	5221	6	27	1014		1393	4842
1083	5222	7	28	1015		1394	4843
1084	5223	1	29	1016		1395	4844
1085	5224	2	30	1017		1396	4845
1086	5225	3	31	1018		1397	4846
1087	5226	4	32	1019		1398	4847
1088	5227	5	33	1020		1399	4848
1089	5228	6	34	1021		1400	4849
1090	5229	7	35	1022		1401	4850
1091	5230	1	36	1023		1402	4851
1092	5231	2	37	1024		1403	4852
1093	5232	3	38	1025		1404	4853
1094	5233	4	39	1026		1405	4854
1095	5234	5	40	1027		1406	4855
1096	5235	6	41	1028		1407	4856
1097	5236	7	42	1029		1408	4857
1098	5237	1	43	1030		1409	4858
1099	5238	2	44	1031		1410	4859
1100	5239	3	45	1032		1411	4860
1101	5240	4	46	1033		1412	4861
1102	5241	5	47	1034		1413	4862
1103	5242	6	48	1035		1414	4863
1104	5243	7	49	1036		1415	4864
1105	5244	1	1/50	1037		1416	4865
1106	5245	2	2	1038		1417	4866
1107	5246	3	3	1039		1418	4867
1108	5247	4	4	1040		1419	4868
1109	5248	5	5	1041		1420	4869
1110	5249	6	6	1042		1421	4870
1111	5250	7	7	1043		1422	4871
1112	5251	1	8	1044		1423	4872
1113	5252	2	9	1045		1424	4873
1114	5253	3	10	1046		1425	4874
1115	5254	4	11	1047		1426	4875
1116	5255	5	12	1048		1427	4876
1117	5256	6	13	1049		1428	4877
1118	5257	7	14	1050		1429	4878
1119	5258	1	15	1051		1430	4879
1120	5259	2	16	1052		1431	4880
1121	5260	3	17	1053		1432	4881
1122	5261	4	18	1054		1433	4882
1123	5262	5	19	1055		1434	4883
1124	5263	6	20	1056		1435	4884
1125	5264	7	21	1057		1436	4885
1126	5265	1	22	1058		1437	4886
1127	5266	2	23	1059		1438	4887
1128	5267	3	24	1060		1439	4888
1129	5268	4	25	1061		1440	4889
1130	5269	5	26	1062		1441	4890
1131	5270	6	27	1063		1442	4891
1132	5271	7	28	1064		1443	4892
1133	5272	1	29	1065		1444	4893
1134	5273	2	30	1066		1445	4894
1135	5274	3	31	1067		1446	4895
1136	5275	4	32	1068		1447	4896
1137	5276	5	33	1069		1448	4897
1138	5277	6	34	1070		1449	4898
1139	5278	7	35	1071		1450	4899
1140	5279	1	36	1072		1451	4900
1141	5280	2	37	1073		1452	4901
1142	5281	3	38	1074		1453	4902
1143	5282	4	39	1075		1454	4903

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	G2	Proleptic Hurban
D	Seasons	H1	Corrected Hurban
E	Sabbatic Periods		
E	Sabbath Year		

"The following are some of the dates [for the Sabbatical year] given in the form of *Anni Mundi Judaici*. Rabbanan Seburai, 4564; Serachiah HaLevi, 4900; R. Tam, 4905, **4906**; Geonim, 4935; Maimonides, theoretical opinion, 4936 (and every fiftieth year is reckoned separately as a Jubilee); *Baal Haitur*, **4948**; *Baal Haterumah*, 4961, **4962**; *Baal Haterumoth*, **4983**, **5011**; *Semag*, **5004**, 5005; *Tosafoth*, 5010, 5011; *Hagahoth Mordechai*, *Gittin*, 5038, **5039**; Asheri, 5073, 5074; *Tur Chosen Mishpat* 5087, 5088. (pg. 43, *A Treatise on the Sabbatical Cycle and the Jubilee*, Dr. b. Zuckermann, 1866, reprinted Sepher-Hermon Press, New York, 1974.)



The purpose of this technical note is to show that RAMBAM does not confirm Wacholder.

Maimonides gives two views of the Sabbatical year, and ends up adopting the one agreeing with Zuckermann. He states that year 1107 of the corrected Churban (dark purple below) is equal to A.S. 1487 (tan) and 4936 A.M. (green at right). He also says that 4936 is Sabbatic. The basis for this is the 50 year view wherein the 1st year of the next cycle comes after the Jubilee. This view is based on restarting the cycles after the exile when Ezra came to Jerusalem.[2] According to Seder Olam this was 414 years before the destruction of the Temple.[1] Therefore ((1107+414) MOD 50) MOD 7 = 0. Also according to this view, Maimonides counts the Churban exclusively from a destruction date in AD 69 (3829), and he computes A.M. including Adam's 0 year in the count (called *tohu*). This makes the destruction year 0 of the Churban. So ((0 + 414) MOD 50) MOD 7 = 0, and the year is Sabbatical (Zuckermann). Maimonides sabbatical year in 4936 is not the same as Wacholder's cycle. Wacholder does not use the MOD 50 cycle. Elsewhere, the Rambam rejects this view and ends up adopting a strict MOD 7 view along with Zuckermann's cycle.

---

1. Details taken from paper by Sheldon Epstein on the problems of Seder Olam Chronology.
2. Really the cycles did not need restarting.

"1. Rambam (Hilchos Shemitah 10:6): The Ge'onim and people of Eretz Yisrael count Shemitos every seven years. This year, 1107 years after the Churban, is Motza'ei Shemitah." So in this source Maimonides rejects Wacholder's view, and interprets "motzei Shemitah" to mean after the Sabbatical year.

"The following are some of the dates [for the Sabbatical year] given in the form of *Anni Mundi Judaici*. Rabbanan Seburai, 4564; Serachiah HaLevi, 4900; R. Tam, 4905, **4906**; Geonim, 4935; Maimonides, theoretical opinion, 4936 (and every fiftieth year is reckoned separately as a Jubilee); *Baal Haitur*, **4948**; *Baal Haterumah*, 4961, **4962**; *Baal Haterumoth*, **4983**, **5011**; *Semag*, **5004**, 5005; *Tosafoth*, 5010, 5011; *Hagahoth Mordechai*, *Gittin*, 5038, **5039**; Asheri, 5073, **5074**; *Tur Chosen Mishpat* 5087, **5088**. (pg. 43, *A Treatise on the Sabbatical Cycle and the Jubilee*, Dr. b. Zuckermann, 1866, reprinted Sepher-Hermon Press, New York, 1974.)

"This error--that the destruction of the Temple was in a sabbatic year-- we find not only among modern scholars, but among the rabbis of the Middle Ages. This is even the idea of R. Tam, see his remarks in Tosaphot on Ab. zarah 9b. Not only were they misled into thinking that the year of destruction was sabbatic, but also as to the exact year. According to some, the destruction took place in the year 3828 A.M., i.e. 67-68 C.E., [which is the correct Sabbatical year!] while others place it in the year 3829 A.M. (68-69 C.E.). See Rashi and Tosaphot, *ibid*, Seder ha-Kabalah, by Abraham inbn Daud (Rabad). Both dates are false. The destruction of the Temple, as is known, took place in the month of Ab, 3830 A.M. (69-70 C.E.)" (Solomon Zeitlin, pg. 31, *Megillat Taanit and Jewish History*).

Again, the Rabbis are confused, and I quote only to show that 67/68 was allowed to be sabbatical by them. Two of three theories can be justified here: 1. Making 67/68 sabbatic and having the temple destroyed then, 2. Making 67/68 sabbatic, and having the temple destroyed in the next year after that according to the other tradition. Either way 67/68 turns out to be Sabbatical!

1219	5358	3	17	1150						1530	4979		
1220	5359	4	18	1151						1531	4980		
1221	5360	5	19	1152						1532	4981		
1222	5361	6	20	1153						1533	4982		
1223	5362	7	21	1154						1534	4983		
1224	5363	1	22	1155						1535	4984		
1225	5364	2	23	1156						1536	4985		
1226	5365	3	24	1157						1537	4986		
1227	5366	4	25	1158						1538	4987		
1228	5367	5	26	1159						1539	4988		
1229	5368	6	27	1160						1540	4989		
1230	5369	7	28	1161						1541	4990		
1231	5370	1	29	1162						1542	4991		
1232	5371	2	30	1163						1543	4992		
1233	5372	3	31	1164						1544	4993		
1234	5373	4	32	1165						1545	4994		
1235	5374	5	33	1166						1546	4995		
1236	5375	6	34	1167						1547	4996		
1237	5376	7	35	1168						1548	4997		
1238	5377	1	36	1169						1549	4998		
1239	5378	2	37	1170						1550	4999		
1240	5379	3	38	1171						1551	5000		
1241	5380	4	39	1172						1552	5001		
1242	5381	5	40	1173						1553	5002		
1243	5382	6	41	1174						1554	5003		
1244	5383	7	42	1175						1555	5004		
1245	5384	1	43	1176						1556	5005		
1246	5385	2	44	1177						1557	5006		
1247	5386	3	45	1178						1558	5007		
1248	5387	4	46	1179						1559	5008		
1249	5388	5	47	1180						1560	5009		
1250	5389	6	48	1181						1561	5010		
1251	5390	7	49	1182						1562	5011		
1252	5391	1	1/50	1183						1563	5012		
1253	5392	2	2	1184						1564	5013		
1254	5393	3	3	1185						1565	5014		
1255	5394	4	4	1186						1566	5015		
1256	5395	5	5	1187						1567	5016		
1257	5396	6	6	1188						1568	5017		
1258	5397	7	7	1189						1569	5018		
1259	5398	1	8	1190						1570	5019		
1260	5399	2	9	1191						1571	5020		
1261	5400	3	10	1192						1572	5021		
1262	5401	4	11	1193						1573	5022		
1263	5402	5	12	1194						1574	5023		
1264	5403	6	13	1195						1575	5024		
1265	5404	7	14	1196						1576	5025		
1266	5405	1	15	1197						1577	5026		
1267	5406	2	16	1198						1578	5027		
1268	5407	3	17	1199						1579	5028		
1269	5408	4	18	1200						1580	5029		
1270	5409	5	19	1201						1581	5030		
1271	5410	6	20	1202						1582	5031		
1272	5411	7	21	1203						1583	5032		
1273	5412	1	22	1204						1584	5033		
1274	5413	2	23	1205						1585	5034		
1275	5414	3	24	1206						1586	5035		
1276	5415	4	25	1207						1587	5036		
1277	5416	5	26	1208						1588	5037		
1278	5417	6	27	1209						1589	5038		
1279	5418	7	28	1210						1590	5039		
1280	5419	1	29	1211						1591	5040		
1281	5420	2	30	1212						1592	5041		
1282	5421	3	31	1213						1593	5042		
1283	5422	4	32	1214						1594	5043		
1284	5423	5	33	1215						1595	5044		
1285	5424	6	34	1216						1596	5045		
1286	5425	7	35	1217						1597	5046		
1287	5426	1	36	1218						1598	5047		
1288	5427	2	37	1219						1599	5048		
1289	5428	3	38	1220						1600	5049		
1290	5429	4	39	1221						1601	5050		
1291	5430	5	40	1222						1602	5051		
1292	5431	6	41	1223						1603	5052		
1293	5432	7	42	1224						1604	5053		
1294	5433	1	43	1225						1605	5054		
1295	5434	2	44	1226						1606	5055		
1296	5435	3	45	1227						1607	5056		
1297	5436	4	46	1228						1608	5057		
1298	5437	5	47	1229						1609	5058		
1299	5438	6	48	1230						1610	5059		
1300	5439	7	49	1231						1611	5060		

4983

"The following are some of the dates [for the Sabbatical year] given in the form of *Anni Mundi Judaici*. Rabbanan Seburai, 4564; Serachiah HaLevi, 4900; R. Tam, 4905, **4906**; Geonim, 4935; Maimonides, theoretical opinion, 4936 (and every fiftieth year is reckoned separately as a Jubilee); *Baal Haitur*, **4948**; *Baal Haterumah*, 4961, **4962**; *Baal Haterumoth*, **4983**, **5011**; *Semag*, **5004**, 5005; *Tosafoth*, 5010, 5011; *Hagahoth Mordechai*, *Gittin*, 5038, **5039**; Asheri, 5073, **5074**; *Tur Chosen Mishpat* 5087, **5088**. (pg. 43, *A Treatise on the Sabbatical Cycle and the Jubilee*, Dr. b. Zuckermann, 1866, reprinted Sepher-Hermon Press, New York, 1974.)

Answer (R. Tam): The siman [cipher] teaches to deduct two years or add five, like the Seifa "v'Od Chamesh Shanim..." We count from when Yavan began to rule the world, in year 41 of Bayis Sheni. Their third year was (year 43, i.e.) Shemitah according to R. Yehudah, therefore we must deduct two. The year 5011 or 5012 was Shemitah, depending on whether the Churban was in year 420 or 421. The rule applies to the Seleucid Era (tan column at the right), and yields Zuckermann's cycle. It was stated this way to conceal the change from Huna's rule.

5004

5011

5011

"The following are some of the dates [for the Sabbatical year] given in the form of *Anni Mundi Judaici*. Rabbanan Seburai, 4564; Serachiah HaLevi, 4900; R. Tam, 4905, **4906**; Geonim, 4935; Maimonides, theoretical opinion, 4936 (and every fiftieth year is reckoned separately as a Jubilee); *Baal Haitur*, **4948**; *Baal Haterumah*, 4961, **4962**; *Baal Haterumoth*, **4983**, **5011**; *Semag*, **5004**, 5005; *Tosafoth*, 5010, **5011**; *Hagahoth Mordechai*, *Gittin*, 5038, **5039**; Asheri, 5073, **5074**; *Tur Chosen Mishpat* 5087, **5088**. (pg. 43, *A Treatise on the Sabbatical Cycle and the Jubilee*, Dr. b. Zuckermann, 1866, reprinted Sepher-Hermon Press, New York, 1974.)

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	H1	Corrected Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

5039

"The following are some of the dates [for the Sabbatical year] given in the form of *Anni Mundi Judaici*. Rabbanan Seburai, 4564; Serachiah HaLevi, 4900; R. Tam, 4905, **4906**; Geonim, 4935; Maimonides, theoretical opinion, 4936 (and every fiftieth year is reckoned separately as a Jubilee); *Baal Haitur*, **4948**; *Baal Haterumah*, 4961, **4962**; *Baal Haterumoth*, **4983**, **5011**; *Semag*, **5004**, 5005; *Tosafoth*, 5010, **5011**; *Hagahoth Mordechai*, *Gittin*, 5038, **5039**; Asheri, 5073, **5074**; *Tur Chosen Mishpat* 5087, **5088**. (pg. 43, *A Treatise on the Sabbatical Cycle and the Jubilee*, Dr. b. Zuckermann, 1866, reprinted Sepher-Hermon Press, New York, 1974.)

| | | |

1383	5522	7	35	1315	1695	5144
1384	5523	1	36	1316	1696	5145
1385	5524	2	37	1317	1697	5146
1386	5525	3	38	1318	1698	5147
1387	5526	4	39	1319	1699	5148
1388	5527	5	40	1320	1700	5149
1389	5528	6	41	1321	1701	5150
1390	5529	7	42	1322	1702	5151
1391	5530	1	43	1323	1703	5152
1392	5531	2	44	1324	1704	5153
1393	5532	3	45	1325	1705	5154
1394	5533	4	46	1326	1706	5155
1395	5534	5	47	1327	1707	5156
1396	5535	6	48	1328	1708	5157
1397	5536	7	49	1329	1709	5158
1398	5537	1	1/50	1330	1710	5159
1399	5538	2	2	1331	1711	5160
1400	5539	3	3	1332	1712	5161
1401	5540	4	4	1333	1713	5162
1402	5541	5	5	1334	1714	5163
1403	5542	6	6	1335	1715	5164
1404	5543	7	7	1336	1716	5165
1405	5544	1	8	1337	1717	5166
1406	5545	2	9	1338	1718	5167
1407	5546	3	10	1339	1719	5168
1408	5547	4	11	1340	1720	5169
1409	5548	5	12	1341	1721	5170
1410	5549	6	13	1342	1722	5171
1411	5550	7	14	1343	1723	5172
1412	5551	1	15	1344	1724	5173
1413	5552	2	16	1345	1725	5174
1414	5553	3	17	1346	1726	5175
1415	5554	4	18	1347	1727	5176
1416	5555	5	19	1348	1728	5177
1417	5556	6	20	1349	1729	5178
1418	5557	7	21	1350	1730	5179
1419	5558	1	22	1351	1731	5180
1420	5559	2	23	1352	1732	5181
1421	5560	3	24	1353	1733	5182
1422	5561	4	25	1354	1734	5183
1423	5562	5	26	1355	1735	5184
1424	5563	6	27	1356	1736	5185
1425	5564	7	28	1357	1737	5186
1426	5565	1	29	1358	1738	5187
1427	5566	2	30	1359	1739	5188
1428	5567	3	31	1360	1740	5189
1429	5568	4	32	1361	1741	5190
1430	5569	5	33	1362	1742	5191
1431	5570	6	34	1363	1743	5192
1432	5571	7	35	1364	1744	5193
1433	5572	1	36	1365	1745	5194
1434	5573	2	37	1366	1746	5195
1435	5574	3	38	1367	1747	5196
1436	5575	4	39	1368	1748	5197
1437	5576	5	40	1369	1749	5198
1438	5577	6	41	1370	1750	5199
1439	5578	7	42	1371	1751	5200
1440	5579	1	43	1372	1752	5201
1441	5580	2	44	1373	1753	5202
1442	5581	3	45	1374	1754	5203
1443	5582	4	46	1375	1755	5204
1444	5583	5	47	1376	1756	5205
1445	5584	6	48	1377	1757	5206
1446	5585	7	49	1378	1758	5207
1447	5586	1	1/50	1379	1759	5208
1448	5587	2	2	1380	1760	5209
1449	5588	3	3	1381	1761	5210
1450	5589	4	4	1382	1762	5211
1451	5590	5	5	1383	1763	5212
1452	5591	6	6	1384	1764	5213
1453	5592	7	7	1385	1765	5214
1454	5593	1	8	1386	1766	5215
1455	5594	2	9	1387	1767	5216
1456	5595	3	10	1388	1768	5217
1457	5596	4	11	1389	1769	5218
1458	5597	5	12	1390	1770	5219
1459	5598	6	13	1391	1771	5220
1460	5599	7	14	1392	1772	5221
1461	5600	1	15	1393	1773	5222
1462	5601	2	16	1394	1774	5223
1463	5602	3	17	1395	1775	5224
1464	5603	4	18	1396	1776	5225

Statistics: Gregg 10x, Rashi 6x, Zuckermann 4x, Wacholder 1x. The Rashi cycle is based on the notion that the temple was destroyed in 3828, which fails to account for Adam's year of life before he was age 1. If we eliminate it, then the score here is Gregg 10x, Zuckerman 4x, Wacholder 1x.

The Actual Churban Era after correcting date of Temple destruction to AD 70 is at the left in the purple column, which counts Av 9 to Tishri 1, AD 70 as year 1. The *Churban* in actual use before about 10th century begain Av 9, AD 69 to Tishri 1, AD 69 as year 1. Though it was mistaken, it is the one that was actually used in the centuries that followed. The idea is no different than the supposed incorrect dating of the Common Era AD from the birth of Messiah.[1] We must keep the era as it was used. Sometime in the 10th to 11th centuries, it was presumed that the *Churban* was exlusively counted[3] from a supposed destruction date of AD 69, and inclusively counted from AD 70 for those who wanted to correct the temple destruction date. This assumption shifts the Churban years forward by one year. (The validity of the assumption is disproved by the Zoar Inscriptions and Seder Olam).

For those who kept the destruction in AD 69 (3829) at its traditional date in a post Sabbatical year, Rabbi Huna's rule could be applied to both ***the Anni Mundi Judaici*** (also called ***Yeẓirah***) and this new revised ***Ḥurban*** era. For example Churban year (1336 + 1) MOD 7 = 0. And A.M (5165 + 1) MOD 7 = 0. Therefore, the year is Sabbatical. Thus came about the confusion that Rabbi Huna's rule applied to the Churban. Rabbi Huna never intended it to. The rule for the original Churban is simply to divide by 7 and take the remainder without adding one. This is because the original Churban counts inclusively from AD 69 (which is year 1 of the cycle).

If the creators of ***Anni Mundi Judaici*** intended that A.M MOD 7 = 0 should indicate a Sabbatic year, they were thwarted by the presumption in Seder Olam that Adam's age 1 = year 1 of the world. This would naturally add up to 3828[2] for the destruction of the 2nd Temple. Restoration of the 0 year of Adam's life makes the actual date of destruction 3829. This change was not enough for a simple MOD 7 rule because 3829 MOD 7 = 0 is sabbatic, and the destruction is supposed to be postsabbatical.

---

1. I have elsewhere shown that if AD is undestood in terms of the "age" of Messiah from his birth, that the era is "correct" in that sense between Jan 1, and Tishri 1 for each year.
2. See Finegan, revised edition, table 54.
3. i.e. omitting the year of the destruction itself from the count of the Churban.

Therefore, Rabbi Huna's rule "add one" is intended to make 3829 post Sabbatical. (3829 + 1) MOD 7 = 1.

When the temple destruction date is changed from AD 69 to AD 70, the sabbatical year is unsuspectingly dragged along with the correction into AD 69. This is the case for those who wish to keep the contrived Seder Olam Chronology from completely failing. The alternative is to reject Seder Olam and realize that the Temple was destroyed in year 2 of the actual cycle.[1] When the destruction date is changed from 3829 to 3830 it is necessary to shift the Churban one year forward.[2] When this happened Rabbi Huna's rule of "add one" was broken. For it gives incorrect results for both 3830 and Churban year 1. (3830+1) MOD 7 = 2, and (1 + 1) MOD 7 = 2. Or to put it another way, it gives correct results that they want to disagree with.

Accordingly, it was necessary to modify Rabbi Huna's rule with a *siman* (cipher). The cipher is to "deduct two" or to "add five" to the era of Alexander (Seleucid era). Thus for example, AS (AS 1737−2) MOD 7 = 6. Or (AS 1737+5) MOD 7 = 6. Thus AS 1737 (AD 1425/1426) is year 6 of Zuckermann's cycle. Why did they just not say compute A.M. Judaici MOD 7 = 0? Because too many other Rabbis already knew that Rabbi Huna's rule was supposed to be applied the A.M. year as (A.M. + 1) MOD 7 = 0. To say A.M. MOD 7 = 0 in place of the traditional rule would too easily show is discrepancy to the Jewish masses.

---

1. In order to justify the 3830 date, some add a year before creation, such that Adam's age 1 becomes year 3 of the world. This is completely *ad hoc*, and so must be rejected as a valid interpretation of Seder Olam. Counting from before creation is an attempt to say that 3830 and 3829 refer to the same year, i.e. just a difference of notation. The AD 69 (3829) error is real. A destruction date of AD 70 (3830) is indeed the next year.
2. This was shown as a consequence of the existence of the error of placing the destruction in 3828. The existence of the 3828 error at least proves that the original Churban counted year 1 from Av 9 3829 to Tishri 1 3829.

The choices can be laid out as follows:

I. If Rabbi Huna's rule is applied to ***Anni Mundi Judaici*** then it gives correct results.
II. I Rabbi Huna's rule is applied to a corrected ***Churban Era*** starting with Av 9, AD 70 to Tishri 1 AD 70 as year 1, then it gives correct results. But this correction was not realized till centuries later.
III. Applied to the ***Seleucid Era***, it gives incorrect results for all theories.
IV. If the rule is applied to the original ***Churban***, it gives incorrect results for all theories.

Wacholder says in his paper (pg. 183, The Calendar of Sabbatical Cycles), "Hence, the formula for finding the year of the Shemitah cycle for any given date is either the era of Yezirah or Hurban or (date + 1):7." He means (DATE+1) MOD 7 = 0. This is exactly correct so long as we do not revise ***Anni Mundi Judaici*** (which Wacholder did!), and so long as the corrected Churban Era is used. But since the corrected Churban did not exist prior to about the 10th century, it cannot be what Rabbi Huna's rule applies to. It must apply to A.M. (Yezirah).

A study of the Zoar Funerary inscriptions proves beyond a doubt that the relation of the Churban to the sabbatical period is described by ***Churban-Era-Date MOD 7***. Since the vast majority of inscriptions agree with this rule, any that disagree error either in the Churban date or the sabbatical cycle year ascribed to it.

It was further proved that Seder Olam demands the destruction of the temple in year 1 of the cycle (see above discussion right after the Bar Kocba revolt (AD 132). Therefore, since 1 Churban MOD 7 = 1, then the 1st year of the Churban is counted inclusively to the year of the Temple's destruction. The rule then that **Churban-Era-Date MOD 7** shows the position in the Sabbatic cycle (via the Zoar inscriptions) proves that Rabbi Huna's rule only applies to ***Anni Mundi Judaici***, since this is the only option left.

A	B	C	D	E	F	G
1466	5604	5	19	1397	1777	5226
1467	5605	6	20	1398	1778	5227
1468	5606	7	21	1399	1779	5228
1469	5607	1	22	1400	1780	5229
1470	5608	2	23	1401	1781	5230
1471	5609	3	24	1402	1782	5231
1472	5610	4	25	1403	1783	5232
1473	5611	5	26	1404	1784	5233
1474	5612	6	27	1405	1785	5234
1475	5613	7	28	1406	1786	5235
1476	5614	1	29	1407	1787	5236
1477	5615	2	30	1408	1788	5237
1478	5616	3	31	1409	1789	5238
1479	5617	4	32	1410	1790	5239
1480	5618	5	33	1411	1791	5240
1481	5619	6	34	1412	1792	5241
1482	5620	7	35	1413	1793	5242
1483	5621	1	36	1414	1794	5243
1484	5622	2	37	1415	1795	5244
1485	5623	3	38	1416	1796	5245
1486	5624	4	39	1417	1797	5246
1487	5625	5	40	1418	1798	5247
1488	5626	6	41	1419	1799	5248
1489	5627	7	42	1420	1800	5249
1490	5628	1	43	1421	1801	5250
1491	5629	2	44	1422	1802	5251
1492	5630	3	45	1423	1803	5252
1493	5631	4	46	1424	1804	5253
1494	5632	5	47	1425	1805	5254
1495	5633	6	48	1426	1806	5255
1496	5634	7	49	1427	1807	5256
1497	5635	1	1/50	1428	1808	5257
1498	5636	2	2	1429	1809	5258
1499	5637	3	3	1430	1810	5259
1500	5638	4	4	1431	1811	5260
1501	5639	5	5	1432	1812	5261
1502	5640	6	6	1433	1813	5262
1503	5641	7	7	1434	1814	5263
1504	5642	1	8	1435	1815	5264
1505	5643	2	9	1436	1816	5265
1506	5644	3	10	1437	1817	5266
1507	5645	4	11	1438	1818	5267
1508	5646	5	12	1439	1819	5268
1509	5647	6	13	1440	1820	5269
1510	5648	7	14	1441	1821	5270
1511	5649	1	15	1442	1822	5271
1512	5650	2	16	1443	1823	5272
1513	5651	3	17	1444	1824	5273
1514	5652	4	18	1445	1825	5274
1515	5653	5	19	1446	1826	5275
1516	5654	6	20	1447	1827	5276
1517	5655	7	21	1448	1828	5277
1518	5656	1	22	1449	1829	5278
1519	5657	2	23	1450	1830	5279
1520	5658	3	24	1451	1831	5280
1521	5659	4	25	1452	1832	5281
1522	5660	5	26	1453	1833	5282
1523	5661	6	27	1454	1834	5283
1524	5662	7	28	1455	1835	5284
1525	5663	1	29	1456	1836	5285
1526	5664	2	30	1457	1837	5286
1527	5665	3	31	1458	1838	5287
1528	5666	4	32	1459	1839	5288
1529	5667	5	33	1460	1840	5289
1530	5668	6	34	1461	1841	5290
1531	5669	7	35	1462	1842	5291
1532	5670	1	36	1463	1843	5292
1533	5671	2	37	1464	1844	5293
1534	5672	3	38	1465	1845	5294
1535	5673	4	39	1466	1846	5295
1536	5674	5	40	1467	1847	5296
1537	5675	6	41	1468	1848	5297
1538	5676	7	42	1469	1849	5298
1539	5677	1	43	1470	1850	5299
1540	5678	2	44	1471	1851	5300
1541	5679	3	45	1472	1852	5301
1542	5680	4	46	1473	1853	5302
1543	5681	5	47	1474	1854	5303
1544	5682	6	48	1475	1855	5304
1545	5683	7	49	1476	1856	5305
1546	5684	1	1/50	1477	1857	5306
1547	5685	2	2	1478	1858	5307

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	H1	Corrected Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	H1	Corrected Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

A	B	C	D	E
1548	5687	3	3	1479
1549	5688	4	4	1480
1550	5689	5	5	1481
1551	5690	6	6	1482
1552	5691	7	7	1483
1553	5692	1	8	1484
1554	5693	2	9	1485
1555	5694	3	10	1486
1556	5695	4	11	1487
1557	5696	5	12	1488
1558	5697	6	13	1489
1559	5698	7	14	1490
1560	5699	1	15	1491
1561	5700	2	16	1492
1562	5701	3	17	1493
1563	5702	4	18	1494
1564	5703	5	19	1495
1565	5704	6	20	1496
1566	5705	7	21	1497
1567	5706	1	22	1498
1568	5707	2	23	1499
1569	5708	3	24	1500
1570	5709	4	25	1501
1571	5710	5	26	1502
1572	5711	6	27	1503
1573	5712	7	28	1504
1574	5713	1	29	1505
1575	5714	2	30	1506
1576	5715	3	31	1507
1577	5716	4	32	1508
1578	5717	5	33	1509
1579	5718	6	34	1510
1580	5719	7	35	1511
1581	5720	1	36	1512
1582	5721	2	37	1513
1583	5722	3	38	1514
1584	5723	4	39	1515
1585	5724	5	40	1516
1586	5725	6	41	1517
1587	5726	7	42	1518
1588	5727	1	43	1519
1589	5728	2	44	1520
1590	5729	3	45	1521
1591	5730	4	46	1522
1592	5731	5	47	1523
1593	5732	6	48	1524
1594	5733	7	49	1525
1595	5734	1	1/50	1526
1596	5735	2	2	1527
1597	5736	3	3	1528
1598	5737	4	4	1529
1599	5738	5	5	1530
1600	5739	6	6	1531
1601	5740	7	7	1532
1602	5741	1	8	1533
1603	5742	2	9	1534
1604	5743	3	10	1535
1605	5744	4	11	1536
1606	5745	5	12	1537
1607	5746	6	13	1538
1608	5747	7	14	1539
1609	5748	1	15	1540
1610	5749	2	16	1541
1611	5750	3	17	1542
1612	5751	4	18	1543
1613	5752	5	19	1544
1614	5753	6	20	1545
1615	5754	7	21	1546
1616	5755	1	22	1547
1617	5756	2	23	1548
1618	5757	3	24	1549
1619	5758	4	25	1550
1620	5759	5	26	1551
1621	5760	6	27	1552
1622	5761	7	28	1553
1623	5762	1	29	1554
1624	5763	2	30	1555
1625	5764	3	31	1556
1626	5765	4	32	1557
1627	5766	5	33	1558
1628	5767	6	34	1559
1629	5768	7	35	1560

Joseph Scaliger, father of modern scientific chronology

James Usshur

Legend

A	A.D. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
T1	Jewish World Era
S2	Era of the Greeks
H1	Corrected Hurban

A	B
1859	5308
1860	5309
1861	5310
1862	5311
1863	5312
1864	5313
1865	5314
1866	5315
1867	5316
1868	5317
1869	5318
1870	5319
1871	5320
1872	5321
1873	5322
1874	5323
1875	5324
1876	5325
1877	5326
1878	5327
1879	5328
1880	5329
1881	5330
1882	5331
1883	5332
1884	5333
1885	5334
1886	5335
1887	5336
1888	5337
1889	5338
1890	5339
1891	5340
1892	5341
1893	5342
1894	5343
1895	5344
1896	5345
1897	5346
1898	5347
1899	5348
1900	5349
1901	5350
1902	5351
1903	5352
1904	5353
1905	5354
1906	5355
1907	5356
1908	5357
1909	5358
1910	5359
1911	5360
1912	5361
1913	5362
1914	5363
1915	5364
1916	5365
1917	5366
1918	5367
1919	5368
1920	5369
1921	5370
1922	5371
1923	5372
1924	5373
1925	5374
1926	5375
1927	5376
1928	5377
1929	5378
1930	5379
1931	5380
1932	5381
1933	5382
1934	5383
1935	5384
1936	5385
1937	5386
1938	5387
1939	5388
1940	5389

1630	5769	1	36	1561	1941	5390
1631	5770	2	37	1562	1942	5391
1632	5771	3	38	1563	1943	5392
1633	5772	4	39	1564	1944	5393
1634	5773	5	40	1565	1945	5394
1635	5774	6	41	1566	1946	5395
1636	5775	7	42	1567	1947	5396
1637	5776	1	43	1568	1948	5397
1638	5777	2	44	1569	1949	5398
1639	5778	3	45	1570	1950	5399
1640	5779	4	46	1571	1951	5400
1641	5780	5	47	1572	1952	5401
1642	5781	6	48	1573	1953	5402
1643	5782	7	49	1574	1954	5403
1644	5783	1	1/50	1575	1955	5404
1645	5784	2	2	1576	1956	5405
1646	5785	3	3	1577	1957	5406
1647	5786	4	4	1578	1958	5407
1648	5787	5	5	1579	1959	5408
1649	5788	6	6	1580	1960	5409
1650	5789	7	7	1581	1961	5410
1651	5790	1	8	1582	1962	5411
1652	5791	2	9	1583	1963	5412
1653	5792	3	10	1584	1964	5413
1654	5793	4	11	1585	1965	5414
1655	5794	5	12	1586	1966	5415
1656	5795	6	13	1587	1967	5416
1657	5796	7	14	1588	1968	5417
1658	5797	1	15	1589	1969	5418
1659	5798	2	16	1590	1970	5419
1660	5799	3	17	1591	1971	5420
1661	5800	4	18	1592	1972	5421
1662	5801	5	19	1593	1973	5422
1663	5802	6	20	1594	1974	5423
1664	5803	7	21	1595	1975	5424
1665	5804	1	22	1596	1976	5425
1666	5805	2	23	1597	1977	5426
1667	5806	3	24	1598	1978	5427
1668	5807	4	25	1599	1979	5428
1669	5808	5	26	1600	1980	5429
1670	5809	6	27	1601	1981	5430
1671	5810	7	28	1602	1982	5431
1672	5811	1	29	1603	1983	5432
1673	5812	2	30	1604	1984	5433
1674	5813	3	31	1605	1985	5434
1675	5814	4	32	1606	1986	5435
1676	5815	5	33	1607	1987	5436
1677	5816	6	34	1608	1988	5437
1678	5817	7	35	1609	1989	5438
1679	5818	1	36	1610	1990	5439
1680	5819	2	37	1611	1991	5440
1681	5820	3	38	1612	1992	5441
1682	5821	4	39	1613	1993	5442
1683	5822	5	40	1614	1994	5443
1684	5823	6	41	1615	1995	5444
1685	5824	7	42	1616	1996	5445
1686	5825	1	43	1617	1997	5446
1687	5826	2	44	1618	1998	5447
1688	5827	3	45	1619	1999	5448
1689	5828	4	46	1620	2000	5449
1690	5829	5	47	1621	2001	5450
1691	5830	6	48	1622	2002	5451
1692	5831	7	49	1623	2003	5452
1693	5832	1	1/50	1624	2004	5453
1694	5833	2	2	1625	2005	5454
1695	5834	3	3	1626	2006	5455
1696	5835	4	4	1627	2007	5456
1697	5836	5	5	1628	2008	5457
1698	5837	6	6	1629	2009	5458
1699	5838	7	7	1630	2010	5459
1700	5839	1	8	1631	2011	5460
1701	5840	2	9	1632	2012	5461
1702	5841	3	10	1633	2013	5462
1703	5842	4	11	1634	2014	5463
1704	5843	5	12	1635	2015	5464
1705	5844	6	13	1636	2016	5465
1706	5845	7	14	1637	2017	5466
1707	5846	1	15	1638	2018	5467
1708	5847	2	16	1639	2019	5468
1709	5848	3	17	1640	2020	5469
1710	5849	4	18	1641	2021	5470
1711	5850	5	19	1642	2022	5471

Sir Isaac Newton

Legend

A	A.D. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
T1	Jewish World Era
S2	Era of the Greeks
H1	Corrected Hurban

1712	5851	7	21	1644	2024	5473	
1713	5852	1	22	1645	2025	5474	
1714	5853	2	23	1646	2026	5475	
1715	5854	3	24	1647	2027	5476	
1716	5855	4	25	1648	2028	5477	
1717	5856	5	26	1649	2029	5478	
1718	5857	6	27	1650	2030	5479	
1719	5858	7	28	1651	2031	5480	
1720	5859	1	29	1652	2032	5481	
1721	5860	2	30	1653	2033	5482	
1722	5861	3	31	1654	2034	5483	
1723	5862	4	32	1655	2035	5484	
1724	5863	5	33	1656	2036	5485	
1725	5864	6	34	1657	2037	5486	
1726	5865	7	35	1658	2038	5487	
1727	5866	1	36	1659	2039	5488	
1728	5867	2	37	1660	2040	5489	
1729	5868	3	38	1661	2041	5490	
1730	5869	4	39	1662	2042	5491	
1731	5870	5	40	1663	2043	5492	
1732	5871	6	41	1664	2044	5493	
1733	5872	7	42	1665	2045	5494	
1734	5873	1	43	1666	2046	5495	
1735	5874	2	44	1667	2047	5496	
1736	5875	3	45	1668	2048	5497	
1737	5876	4	46	1669	2049	5498	
1738	5877	5	47	1670	2050	5499	
1739	5878	6	48	1671	2051	5500	
1740	5879	7	49	1672	2052	5501	
1741	5880	1	1/50	1673	2053	5502	
1742	5881	2	2	1674	2054	5503	
1743	5882	3	3	1675	2055	5504	
1744	5883	4	4	1676	2056	5505	
1745	5884	5	5	1677	2057	5506	
1746	5885	6	6	1678	2058	5507	
1747	5886	7	7	1679	2059	5508	
1748	5887	1	8	1680	2060	5509	
1749	5888	2	9	1681	2061	5510	
1750	5889	3	10	1682	2062	5511	
1751	5890	4	11	1683	2063	5512	
1752	5891	5	12	1684	2064	5513	
1753	5892	6	13	1685	2065	5514	
1754	5893	7	14	1686	2066	5515	
1755	5894	1	15	1687	2067	5516	
1756	5895	2	16	1688	2068	5517	
1757	5896	3	17	1689	2069	5518	
1758	5897	4	18	1690	2070	5519	
1759	5898	5	19	1691	2071	5520	
1760	5899	6	20	1692	2072	5521	
1761	5900	7	21	1693	2073	5522	
1762	5901	1	22	1694	2074	5523	
1763	5902	2	23	1695	2075	5524	
1764	5903	3	24	1696	2076	5525	
1765	5904	4	25	1697	2077	5526	
1766	5905	5	26	1698	2078	5527	
1767	5906	6	27	1699	2079	5528	
1768	5907	7	28	1700	2080	5529	
1769	5908	1	29	1701	2081	5530	
1770	5909	2	30	1702	2082	5531	
1771	5910	3	31	1703	2083	5532	
1772	5911	4	32	1704	2084	5533	
1773	5912	5	33	1705	2085	5534	
1774	5913	6	34	1706	2086	5535	
1775	5914	7	35	1707	2087	5536	
1776	5915	1	36	1708	2088	5537	
1777	5916	2	37	1709	2089	5538	
1778	5917	3	38	1710	2090	5539	
1779	5918	4	39	1711	2091	5540	
1780	5919	5	40	1712	2092	5541	
1781	5920	6	41	1713	2093	5542	
1782	5921	7	42	1714	2094	5543	
1783	5922	1	43	1715	2095	5544	
1784	5923	2	44	1716	2096	5545	
1785	5924	3	45	1717	2097	5546	
1786	5925	4	46	1718	2098	5547	
1787	5926	5	47	1719	2099	5548	
1788	5927	6	48	1720	2100	5549	
1789	5928	7	49	1721	2101	5550	
1790	5929	1	1/50	1722	2102	5551	
1791	5930	2	2	1723	2103	5552	
1792	5931	3	3	1724	2104	5553	
1793	5932	4	4	1725	2105	5554	

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	H1	Corrected Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

Articles of Confederation

Tsarina Catherine II, the Great

George III

George III

Washington

ry Fynes Clinton, Chronologist

"The doubt still rests upon an alternative of two years, and, as regards the example just adduced, it rests upon the years **5613** and 5614. In religious practice, with reference to the observance of the Sabbatical year in Palestine, the Rabbins fix upon 5614 as a Sabbath of the land. This has been done after an elaborate inquiry, on balancing the various evidences derived from the Talmud, and after accomodating the result to the tradition coming down from the Geonim. Parchi, trammelled by this difference, likewise decides in favour of the year 5614, but leaves it optional to regard the other year as the one in which the Sabbath of the land should be observed. (Zuckermann, pg. 44).

If we assume that Rabbi Halaphta had the sabbatical year right, and that he was right in Seder Olam that the temple was destroyed in a postsabbatical year, but wrong on the temple destruction date, then the answer is 5614 (Zuckermann). On the otherhand, if we assume that Halaphta had the sabbatical cylce right, and that he is wrong that the temple was destroyed in a postsabbatical year, and wrong on the temple destruction date, then the answer is 5613 (Gregg).

The *Seder Olam* Chronology is contrived to superficially meet the requirements of Daniel 9:24-27. The work is the foundation of Talmudic sabbatical year chronology. The claim is made therein that both the first and second temples were destroyed in a postsabbatical year. We happen to know that the first temple was destroyed in 587 BC. However for this analysis I will allow 586 also. Here are the results:

Rashi	587 is year 5 of the cycle	from AD 66/67 backward
Rashi	586 is year 6 of the cycle	from AD 66/67 backward
Gregg	587 is year 4 of the cycle	from AD 67/68 backward
Gregg	586 is year 5 of the cycle	from AD 67/68 backward
Zuckermann	587 is year 3 of the cycle	from AD 68/69 backward
Zuckermann	586 is year 4 of the cycle	from AD 68/69 backward
Wacholder	587 is year 2 of the cycle	from AD 69/70 backward
Wacholder	586 is year 3 of the cycle	from AD 69/70 backward

Observe here that in every case that Rabi Halaphta's claim in Seder Olam is proven false. The reign of Nebudcadnezzar is fixed by VAT 4967 and other astronomical texts. Therefore, the words, "going out of a Sabbatical year" applied in Seder Olam to the first and second temples are proved false. We may only assume that Halphta was right about the sabbatical cycle, but wrong on both the year of destruction of both temples, and wrong on the post-sabbatical year claim. It follows that the Rabbi started with the true sabbatical cycle, and contrived everything else to fit with it. This makes the Rabbi a false prophet. The answer is clearly 5613. But the modern Rabbis don't want to believe Halaphta is a false prophet. So when history exposes his chronology as false (the Temple was destroyed in AD 70), they change the sabbatical year by one year to keep his theory from sinking.

Jewish Immigration to Israel begins. The existing Jewish population was about 25,000 (10%) split into four cities of Safed, Tiberias, Hebron, and Jerusalem amongst a population of about 250,000 non-Jews.

The "first Aliyah"

Willis Judson Beecher

Legend

A	A.D. Years
B	Year of World
C	Sabbatic Periods
C	Sabbath Year
D	Seasons
E	Sabbatic Periods
E	Sabbath Year
E	Jubilee Year
T1	Jewish World Era
S2	Era of the Greeks
H1	Corrected Hurban

The Jewish population is now about 50,000 (14%), and the non-Jewish population about 350,000. Theodor Herzl publishes "The Jewish State" in 1896.

The "second Aliyah"

Founding of Tel Aviv; first Kibbutz.

The Jewish population is now about 85,000 (17%), and the Arab population about 500,000.

Balfour Declaration establishing a Jewish home with the goal of statehood.
Defeat of the Ottoman Empire.

Arab Nationalists riot. As a result the British begin to restrict Jewish Immigration.

Jordan cut off from the Mandate. Israel is cut in half.

Jews are 15% of the population, but Jewish taxes are 45% of total taxes.

More Arab riots. British restrict land sales to Jews and Immigration.

By 1936 175,000 Jews arrive bringing the Jewish population to 370,000 (39%) among an Arab population of 950,000.
Nazi and Arab propaganda against Jews leading to Arab revolt in April 1936. The British arm 3000 Jewish guards.

Peel Commission plans an Arab state inside the Jewish part of the Mandate. Germany and Arabs reject Peel, and begin to arm the Arabs.

Arab revolt resumes. Casulties: 2,394 Jews; 610 British; 3,764 Arabs. British abandon the idea of a Jewish state. Nevertheless, the Yishuv joins Britian's side in WWII. The Arabs support Nazi Germany, and recurit Bosnian Muslims to be SS officers for extermination of the Jews.

David L. Cooper

Feb. 1947, UN Partition plan.

Nov. 29, 1947. Partition adopted by the UN. Palestinians reject the plan.

British withdraw from Mandate; 175,000 Palestinians leave.

14 May, 1948. Jewish Israel becomes a State. 5 Arab states attack Israel in the war for Independence.

300,000 Palestinians flee to Arab countries, but more are rejected and 420,000 end up in UN administered refugee camps. The vast majority fled from unfounded fears. A few who were potential security threats to Israel

were forced out. Jewish were ethnically cleansed in the Egyptian and Jordanians areas.

Around 650,000 Jews are forced to flee from Arab countries.

Border Skirmishes with Egypt and Jordan.

The Sinai Crisis.

PLO founded.

Six Day War, size of Israel doubles.

Yom Kippur War. Israel at the gates of Cairo and Damascus.

Peace accord with Egypt. Israel withdraws from Sinai. This was the only peace accord to suceed for a generation.

Lebanon War against PLO and Syria.

The first "Intifada" Riots

The Gulf war. Iraqi missile attack.

First Christian Aliyah to Israel, 300,000, from former Soviet Union (paralell to the Jewish Aliyah of 1881). These Christians were non-Jewish relatives who immigrated as part of Jewish families.

PA established.
Rabin Murdered
Suicide attacks lead to the election of Netanyahu.

Israel leaves Lebanon.
Second Intifada.

Iraq War, 2003.

Israel withdraws from Gaza, Sept. 1, 2005.

Summer 2006, Second Lebanon War, Israel under missile attack.

Legend

A	A.D. Years	E	Jubilee Year
B	Year of World	T1	Jewish World Era
C	Sabbatic Periods	S2	Era of the Greeks
C	Sabbath Year	H1	Corrected Hurban
D	Seasons		
E	Sabbatic Periods		
E	Sabbath Year		

Nov. 29, 2012. Status of "Statehood" for Palestinians voted by UN., Compare Nov. 29, 1947.

World War III; nearby Islamic nations eliminated on Israel border, Second Jewish Holocaust. The world realizes they have wronged the Jews again.

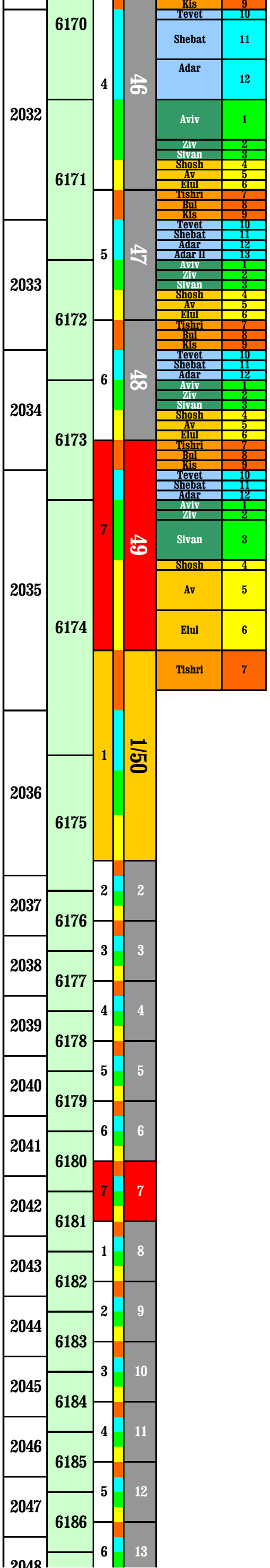
Publication date of this chronology

Educated Guesses begin here

Years since the death and resurrection of Messiah in AD 34.

Years since 539 b.c. when Babylon was last defeated by Cyrus.

Rebuilding of Babylon at the End of 2569 years ?

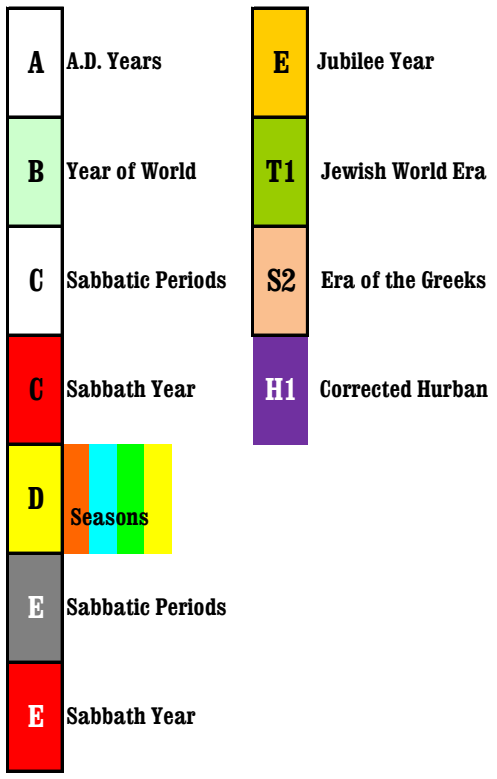


My last prophetical guess was here. I believe it is more probably incorrect than the next Jubilee where I have recast the same patterns. I wouldn't bet my life on the impossibility of it being here, but I think I have good reasons it will not be.

Yes, we should be aware of what is possible, still I think what has already taken place prophetically, and has already been fulfilled, is much more wonderful than pretending to know the exact times in the future.

THIRD DAY

Legend



2049	6188	1	15	2722
2050	6189	2	16	2723
2051	6190	3	17	2724
2052	6191	4	18	2725
2053	6192	5	19	2726
2054	6193	6	20	2727
2055	6194	7	21	2728
2056	6195	1	22	2729
2057	6196	2	23	2730
2058	6197	3	24	
2059	6198	4	25	
2060	6199	5	26	
2061	6200	6	27	
2062	6201	7	28	
2063	6202	1	29	
2064	6203	2	30	
2065	6204	3	31	
2066	6205	4	32	
2067	6206	5	33	
2068	6207	6	34	
2069	6208	7	35	
2070	6209	1	36	
2071	6210	2	37	
2072	6211	3	38	
2073	6212	4	39	

Years since 672 b.c. when Ephraim became "not a people" -- a mixture of nations were settled in Ephraim, and the remnant of Ephraim was deported.

390x7 years from Ephraim being not a people.

End Time Prophetical Scenario. This is my best guess, and I am probably incorrect. This is to show how the prophetical times can be arranged. They can be so arranged for other Jubilee cycles also.

2074
6213
2075
6214
2076
6215
2077
6216
2078
6217
2079
6218
2080
6219
2081
6220
2082
6221
2083
6222
2084
6223

365 365 365 366 365 365 365 365

5 6 7 1 2 3 4 5 6 7

40 41 42 43 44 45 46 47 48 49

1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 13 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 13 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7

Day 185 Sunday, Tishri 1, 19 Sept. Rise of the Anti Messiah.

Educated Guess

1260 Days, Two Witnesses

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

"Blessed is the one waiting, and reaching unto 1335 days."

1150 Days of Trampling on the Cohanim (2300 setting/daybreaks)

1290 Days: Till Resurrection of the Dead

1260 Days: Israel Provided For in the Wilderness

Beast receives world kingdom for 42 months (1st month may be

Daily Sacrifice Ended

Day 346, Wednesday, 16 Adar, Feb 26; two witness slain by the beast.

Day 349, Sabbath, 19 Adar, March 1; two witness complete their testimony by rising from the dead

Day 350, Sunday, 20 Adar; Abomination of Desolation set up.

Day 14, 21 Nisan, 1 April = 7th day Unleavened Bread, Israel flees to wilderness.

Vision of Daniel 8

Educated Guess

Educated Guess

Beast rules Jerusalem at least part of the 42nd month

144,000 Liberate The land.

Temple Cleansed

Day 178, Eve of Yom Kippur, 9 Tishri, Sept 11, at sunset; Resurrection of the

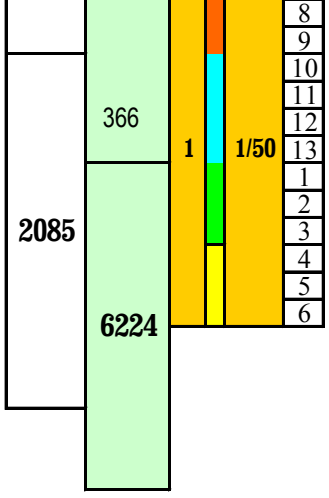
7 1 2 3 4 5 6 7

Seven Trumpets

5th Trumpet

7 Bowls of Wrath

Tishri
Heshvan
Kislev
Tevet
Shebat
Adar
Nisan
Iyar
Sivan
Shosh
Av
Elul



Dead.

Day 179, 10 Tishri, Yom Kippur,Living cleansed and

Educated Guess