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Calculating December 25 as the Birth of Jesus in Hippolytus' *Canon* and *Chronicon*

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Abstract

This article argues that around 235 CE Hippolytus of Rome placed the birth of Jesus on December 25. While this has been theorized in the past, this article brings forward hitherto unheralded evidence about Jesus' birth from Hippolytus' *Canon* and his *Chronicon*. First, the *Canon* marks the Passover as the γένεσις of Jesus, a word which scholars have previously thought refers to birth. This article however uses evidence from an extensive word study to show that the term most likely refers to conception, which would then place the birth of Jesus sometime in late fall or early winter. Secondly, the article shows that in his *Chronicon* Hippolytus placed Jesus' birth exactly nine months after the anniversary of the world's creation. Calculations in his *Chronicon* and *Canon* indicate that Hippolytus thought the world was created on March 25, meaning that he likely believed that Jesus was born on December 25.

Keywords

Hippolytus – Christmas – December 25 – Calculation Theory – History of Religions Theory

When investigating the origin of the traditional date of Christmas, December 25, the best place to start is its earliest historical reference. Almost all scholars find this reference in 336 CE from an entry in the *Depositio Martirum* of the *Chronography of 354*.[1] It reads: *VIII kal. Ian. natus*

1 For a discussion on various issues related to the *Chronography of 354* see R. W. Burgess, 'The Chronograph of 354: Its Manuscripts, Contents, and History,' *Journal of Late Antiquity* 5

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Christus in Betleem Iudeae, 'December 25, Christ is born in Bethlehem of Judea.'[2]

To explain why this date was chosen for Jesus' birth, scholars split into two major theories.[3] The supporters of the Calculation Theory[4] use the above entry, as well as other earlier Christian testimonies, to argue that the selection of December 25 was based on the belief that Jesus was conceived on the Passover.[5]

(2012), 345-96; M. R. Salzman, *On Roman Time: The Codex-Calendar of 354 and the Rhythms of Urban Life in Late Antiquity*, The Transformation of the Classical Heritage 17 (Berkeley, 1990).

2 My translation from Part XII, *Depositio martirum, Chronography of 354* found in Th. Mommsen, ed., *Chronica Minora Saec. IV. V. VI. VII.*, MGH.AA 9.1 (Weimar, 1892), 71 line 2. Most defend the authenticity of the entry naming December 25 as the birthday of Jesus such as J. Naumowicz, 'Le calendrier de 354 et la fête de Noël,' *Palamedes* 2 (2007), 173-88, at 174-179. But some have argued that it may be an interpolation: H. Förster, 'Die beiden angeblich "ältesten Zeugen" des Weihnachtsfestes,' *Archiv für Liturgiewissenschaft* 42 (2000), 29-40. Part VIII of the *Chronography of 354* also states that Jesus was born on December 25: *Hoc cons. dominus Iesus Christus natus est VIII kal. Ian. d. Ven. luna XV* found in Mommsen, ed., *Chronica Minora Saec., 56*. But this is usually regarded as a later interpolation. See S. K. Roll, 'The Debate on the Origins of Christmas,' *Archiv für Liturgiewissenschaft* 40 (1998), 1-16, at 2.

3 The best and most recent overview of research regarding these two theories is by C. Ph. E. Nothaft, 'The Origins of the Christmas Date: Some Recent Trends in Historical Research,' *Church History* 81 (2012), 903-11; P. F. Bradshaw and M. E. Johnson, *The Origins of Feasts, Fasts, and Seasons in Early Christianity* (Collegeville, Minnesota, 2011), 123-30. Bradshaw and Johnson decline to support either theory saying that the 'case thus remains unproven one way or the other,' 127, but Nothaft supports the Calculation Theory in his later publication cited below. See also S. K. Roll, *Toward the Origins of Christmas*, Liturgia Condenda 5 (Kampen, 1995); Roll, 'The Debate on the Origins of Christmas,' 1-16. For an extensive overview of primary sources regarding the origination of a Christmas feast see H. Förster, *Die Feier der Geburt Christi in der Alten Kirche: Beiträge zur Erforschung der Anfänge des Epiphanie- und des Weihnachtsfests* (Tübingen, 2000). Förster however omits any reference to Julius Africanus.

4 The Calculation Theory was first proposed in the modern era by F. Piper, 'Der Ursprung des Weihnachtsfestes und das Datum der Geburt Christi,' *Evangelischer Kalender* 7 (1856), 41-56. But it was popularized by L. Duchesne, *Origines du culte chrétien; étude sur la liturgie latine avant Charlemagne* (Paris, 1889). Too many scholars have supported the Calculation Theory to be listed here, but it has most recently been defended by C. Ph. E. Nothaft, 'Early Christian Chronology and the Origins of Christmas Date,' *Questions Liturgiques/Studies in Liturgy* 94 (2013), 247-65. Other major proponents of the theory include H. Engberding, 'Der 25. Dezember als Tag der Feier der Geburt des Herrn,' *Archiv für Liturgiewissenschaft* 2 (1952), 25-43; Th. J. Talley, *The Origins of the Liturgical Year*, 2nd ed (Collegeville, Minnesota, 1991), 85-103.

5 Supporters argue that the following early sources show that the Passover was an important date for marking the beginning of Jesus' life: Clement of Alexandria, *Stromata* 1.21.145-146; Hippolytus, *Canon*; *de Pascha Computus 19*; and Julius Africanus, *Chronographia* F93 line 108,

Proponents maintain that calculations by early christian chronologists showed that this Passover would have been on March 25, the roman Vernal Equinox. The chronologists, as the theory goes, believed that Jesus surely had an ideal nine month gestational period, which means he would have been born on December 25.

Ironically, a different part of the *Chronography of 354*, known as the *Philocalian Calendar*, also speaks of another birthday on December 25, but this time of a certain *invictus*, 'unconquered.'[6] Supporters of the opposing History of Religions Theory interpret this as referring to the birthday of the 'unconquered Sun,' the sun god Sol, which took place on December 25, the Winter Solstice to the Romans.[7] Proponents then claim that the date of December 25 was chosen because it resonated with a culturally pagan society.[8]

While the History of Religions Theory currently holds great sway in both academic communities and popular culture, its foundations are not as strong as commonly thought. Work by Hijmans has drawn attention to the fact that evidence for a festival to Sol on December 25 is quite slim and hence the idea

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T93c line 9 found in Martin Wallraff et al. eds., *Iulius Africanus Chronographiae: the Extant Fragments*, GCS NF 15 (Berlin, 2007).

6 Part VI, *Philocalian Calendar, Chronography of 354* found in Th. Mommsen ed., *Inscriptiones Latinae Antiquissimae Ad C. Caesaris Mortem* (Berlin, 1893), 278. But some have argued that this entry is also not authentic, see St. E. Hijmans, 'Usener's Christmas: A Contribution to the Modern Construct of Late Antique Solar Syncretism,' in *Hermann Usener und die Metamorphosen der Philologie*, ed. M. Espagne and P. Rabault-Feuerhahn (Wiesbaden, 2011), 139-51 at 149.

7 Also important for this theory is an inscription by Emperor Aurelian dedicated to the 'Unconquered Sun,' Hermann Dessau, *Inscriptiones Latinae selectae*, vol. 1 (Berlin, 1892), 580; and the *Hymn to King Helios* 4.156 by Julian the Apostate found in Wilmer Cave Wright, *The works of the Emperor Julian in three volumes*, vol. 1, LCL 13 (New York: Macmillan, 1913), 426-429.

8 As with the Calculation Theory, there are many proponents of the History of Religions Theory which I cannot list here, the founder of the modern theory is H. Usener, *Weihnachtsfest* (Bonn, 1889). Other important supporters include B. Botte, *Les origines de la Noël et de l'Épiphanie: Étude historique* (Louvain, 1932); H. Frank, 'Frühgeschichte und Ursprung des römischen Weihnachtsfestes im Lichte neuerer Forschung,' *Archiv für Liturgiewissenschaft* 2 (1952), 1-24; P. Jounel, 'The Christmas Season,' in *The Church at Prayer: An Introduction to the Liturgy*, ed. A. G. Martimort, trans. M. O'Connell, vol. 4 (Collegeville, Minnesota, 1986), 77-89. Not all scholars believe that the Calculation Theory and History of Religions Theory are mutually exclusive and therefore hold to both, such as Roll, 'The Debate on the Origins of Christmas,' 15.

that it provided a basis for dating the birth of Jesus is just as tenuous.[9] In a large study on the origins of Christmas, Förster critiques the History of Religions Theory for similar reasons, but also claims that the Calculation Theory is improbable because it is burdened by extensive and irrational speculations.[10] Förster however does not explain why the date of December 25 was chosen originally, but theorizes that it became widely accepted due to the increased popularity of pilgrimages to the holy land and the solar symbolism that the Winter Solstice furnishes.[11] Most recently Nothaft has defended the Calculation Theory by arguing that, regardless of the logic, early Christian chronologists did indeed practice mathematical and astronomical calculations in order to determine when Jesus was born. Nothaft posits that, in 221 CE, Julius Africanus may have been the first to select December 25 as the birthday of Jesus, though he admits that we cannot be certain of this fact.[12] It 'is impossible to tell,' he concludes, if chronological speculations like that of Africanus first selected the date of December 25 'unless more evidence comes to light.'[13]

In this article, I hope to furnish just such evidence. I will argue that around the same time as Africanus, Hippolytus of Rome did indeed derive the date of Jesus' birth from similar chronological speculations and that this date was most probably December 25. Just as with Africanus, we cannot be absolutely certain of this, but regardless of what date Hippolytus did select, his system of calculation adds further support to the idea that such a method was eventually used to select December 25 as the date of Jesus' birth.

Before beginning however, I should first add a word about the nature of this study. We must remember that when analyzing the works of Christian chronologists, like Hippolytus, we enter a place quite different from the realm of commentaries, liturgies, homilies, canon law, and theological speculation. Instead we find ourselves in a confusingly complex and unremittingly exact mathematical and astronomical world where chronologists debate not only about the year in which the earth was created, but on what day of the month, and even over what hour of which day the moon was created and in what

9 St. E. Hijmans, 'Sol Invictus, the Winter Solstice, and the Origins of Christmas,' *Mouseion* 47 (2003), 377-98; St. E. Hijmans, 'Sol: The Sun in the Art and Religions of Rome' (PhD dissertation University of Groningen, 2009) http://dissertations.ub.rug.nl/faculties/arts/2009/s.e.hijmans/, 583-95.

10 H. Förster, *Die Anfänge von Weihnachten und Epiphanias: Eine Anfrage an die Entstehungshypothesen*, Studien und Texte zu Antike und Christentum 46 (Tübingen, 2007), 1-31, especially 6. See also Förster, *Die Feier der Geburt Christi in der Alten Kirche*, 194.

11 Förster, *Die Anfänge von Weihnachten und Epiphanias*, 306-08.

12 Nothaft, 'Early Christian Chronology,' 264.

13 Ibid. 265.

phase.[14] Though the chronologists could often be painstakingly precise, they were human and made mistakes, occasionally they even changed their minds or thought it was just fine to hold mutually contradictory theories.[15] Sometimes these are the very things which help us to unravel a puzzle,[16] but other times they muddy the waters and require even more effort to solve.

Aside from these obstacles, some find the presuppositions of chronologists to be the most challenging to work with. Förster, for example, dismisses attempts at analyzing the methods and assumptions of ancient chronologists because they are illogical and require 'almost breathtaking mental acrobatics'[17] and therefore are of little value in determining how the date of Jesus' birth was selected.[18] While it may be tempting to quietly ignore debates which seem obscure and ill-informed to us—such as whether Jesus was conceived on the Passover, or the Vernal Equinox, or both—these are precisely the things that ancient and medieval chronologists cared about and it is therefore what gives us a window into their thought world. Analyzing Hippolytus' presuppositions and chronological methods, whether logical or illogical, will therefore help us to determine when Hippolytus thought that Jesus was born.

Lastly, I must briefly discuss the authorship of the Hippolytan corpus. Though its authors or author has been the subject of much debate, scholars are united in believing that the same author wrote the *Canon*, and the *Chronicon*, the two works with which this paper is concerned.[19] My argument does not

14 For example *De Pascha Computus* 6.

15 For example, Clement of Alexandria enumerates two contradictory lists of Roman emperors in *Stromata* 1.21.144; the *Canon* of Hippolytus simultaneously displays two contradictory chronologies in its notes on biblical Passovers, see A. A. Mosshammer, *The Easter Computus and the Origins of the Christian Era*, Oxford Early Christian Studies (Oxford, 2008), 123; G. Salmon, 'The Commentary of Hippolytus on Daniel,' Hermathena 8 (1892), 161-190 at 170-173.

16 For example, the astronomical mistakes which Hippolytus made in his *Canon* help us to date the *Canon* before the mistakes manifested themselves. I discuss these mistakes later on in this article.

17 'Fast schon atemberaubenden Geistesakrobatik.' Förster, *Die Anfänge von Weihnachten und Epiphanias*, 6. See also Förster, *Die Feier der Geburt Christi in der Alten Kirche*, 194.

18 See Nothaft, 'The Origins of the Christmas Date.' 910 and Nothaft, 'Early Christian Chronology.' 251-53, who criticizes Förster for downplaying the value of understanding the assumptions of ancient chronologists.

19 That the same author wrote the *Canon* and the *Chronicon* has been most recently supported by C. Ph. E. Nothaft, *Dating the Passion: The Life of Jesus and the Emergence of Scientific Chronology (200-1600)*, Time, Astronomy, and Calendars, vol. 1 (Leiden, 2012), 40-47; O. Andrei, 'Dalle Chronographiai di Giulio Africano alla Synagoge di "Ippolito,"' ed. M. Wallraff, *Julius Africanus und die christliche Weltchronik*, Texte und Untersuchungen

require Hippolytus of Rome to have written these works, though I believe he did.[20]

1 The *Canon* of Hippolytus

A fragment of Hippolytus' *Canon* came to light with the discovery of an ancient statue depicting a seated figure, which was found in a graveyard near the Via Tiburtina in Rome in 1551 AD.[21] So rare is a find of this magnitude that the statue now sits at the entrance to the Vatican Library. On the right side of the statue is inscribed a lunar table which was taken from Hippolytus' *Canon*[22] and written in 222 CE.[23]

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157 (New York, 2006), 113-145; A. A. Mosshammer, *The Easter Computus and the Origins of the Christian Era*, 121. Other supporters include G. N. Bonwetsch, 'Die Datierung der Geburt Christi in dem Danielcommentar Hippolyts.' 525-526; R. W. O. Helm and A. Bauer, eds., *Hippolytus Werke: Die Chronik*, vol. 4, GCS 46 (Berlin, 1955), 112; M. Marcovich, ed., *Hippolytus Refutatio Omnium Haeresium*, Patristische Texte und Studien 25 (Berlin, 1986), 8-17; G. Ogg, 'Hippolytus and the Introduction of the Christian Era.' *Vigiliae Christianae* 16 (1962), 4; M. Richard, 'Comput et Chronographie Chez Saint Hippolyte,' *Mélange de science religieuse* 8 (1951), 19-50 at 43; Salmon, 'The Commentary of Hippolytus on Daniel,' 173; A. Brent, *Hippolytus and the Roman Church in the Third Century: Communities in Tension Before the Emergence of a Monarch-Bishop* (Brill, 1995), 273-76; J. A. Cerrato, *Hippolytus between East and West: The Commentaries and the Provenance of the Corpus* (Oxford, 2002), 122; P. Nautin, 'La controverse sur l'auteur de l'Elenchos,' *Revue d'histoire ecclesiastique* 47 (1952), 5-43 at 26-33.

20 The following scholars assign these three writings to one author named Hippolytus: Richard, 'Comput et chronographie chez Saint Hippolyte,' 48, Helm and Bauer, *Hippolytus Werke: Die Chronik*, 112; Bonwetsch, 'Die Datierung der Geburt Christi in dem Danielcommentar Hippolyts,' 526; Andrei, 'Dalle chronographiai di Giulio Africano alla Synagoge di 'Ippolito,' 144; Salmon, 'The Commentary of Hippolytus on Daniel,' 173; Ogg, 'Hippolytus and the Introduction of the Christian Era,' 4.

21 Brent, *Hippolytus and the Roman Church in the Third Century*, 5-50. Brent persuasively argues that the statue was indeed found in the Via Tiburtina contra Margherita Guarducci, 'La Statua di sant'Ippolito'e la sua provenienza,' *Nuove ricerche su Ippolito. Studia Ephemeridis Augustinianum* 30 (1989), 61-74.

22 For the most in-depth discussion of this lunar table see A. Ferrua and G. B. de Rossi, eds., *Inscriptiones Christianae Urbis Romae Septimo Saeculo Antiquiores, Nova Series: Coemeteria Viae Tiburtinae*, Pont. Institutum Archaeologiae Christianae, vol. 7 (Rome, 1980). ICUR #7.19935. For additional pictures see Brent, *Hippolytus and the Roman Church in the Third Century*, plates 1-7; M. Guarducci, *Epigrafia Greca*, vol. 4 (Rome, 1967), 535-545.

23 The heading of the lunar table indicates that the first year in the chart corresponds to 222 CE, Saturday, April 13. Indeed, according to NASA calculations there was a full moon on

The lunar table is a reference tool designed to calculate the date of all past and future Passovers by determining the date of the full moon that occurs on or near the Vernal Equinox, which was fixed as March 25 in the Julian calendar.[24] The Passover was on this date and Easter on the first Sunday after it.[25] However, calculating past and future dates of the Passover is quite complicated and despite his efforts Hippolytus failed at his attempt. The chart is inaccurate just three years after it began.[26] In fact, twenty years after Hippolytus wrote his *Canon*, an anonymous author published a work called *de Pascha Computus* which was an attempt, scholars believe, at correcting the *Canon* of Hippolytus.[27] However, this anonymous author was also wrong. Elijah of Nisibis is the last author to discuss the *Canon* and he says that its calculations are 'greatly distorted.'[28]

Despite this, the table leaves us with a valuable tool for determining when Hippolytus thought various biblical Passovers occurred. Scattered around the lunar table are notes concerning eight important biblical Passovers. These notes allow us to determine precisely when Hippolytus thought that those Passovers occurred by counting backwards in the table until the noted date is reached. Two of these notes concern the beginning and end of Jesus' life. One note places the 'Passion of Christ' on Friday, March 25 which, according to Hippolytus' calculations, occurred on 29 CE. The second states that the 'genesis (γένεσις) of Christ' occurred on April 2 of 2 BCE.[29]

Γένεσις is the same word used for the first book in the Bible and typically means 'becoming,' 'beginning' or 'origin.'[30] Scholars have long debated whether

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this date. See NASA, 'Phases of the Moon: 201 to 300,' accessed June 1, 2010, http://eclipse.gsfc.nasa.gov/phase/phases0201.html.

24 Pliny, *Natural History* 18.66; Columella, *De re rustica* 9.14; John Lydus, *De mensibus* 61.

25 The date of Easter is made clear by the inscription on the left side of the chair which tabulates the dates of Easter according to the Passover tables on the right side of the chair. ICUR #7.19935 and Mosshammer, *The Easter Computus and the Origins of the Christian Era*, 124.

26 NASA, 'Phases of the Moon: 201 to 300.'

27 See Mosshammer, *The Easter Computus and the Origins of the Christian Era*, 125-127, and the discussion later on in this article.

28 ܟܬ ܥܡ ܟܚܕ; My translation from J.-B. Chabot, *Eliae Metropolitae Nisibeni Opus Chronologicum II*, CSCO 62 (Louvain, 1910), 112 line 25.

29 I checked these calculations myself. For information on how to make these calculations see Mosshammer, *The Easter Computus and the Origins of the Christian Era*, 121-125; see also Nothaft, *Dating the Passion: The Life of Jesus and the Emergence of Scientific Chronology (200-1600)*, 42-43.

30 G. Liddell, R. Scott, St. Jones, eds., 'γένεσις,' *The Liddell-Scott-Jones Greek-English Lexicon*, 343.

γένεσις in this context refers to the birth of Jesus or his conception.[31] If 'birth' is meant then it means of course that Hippolytus believed Jesus was born on April 2. However, if 'conception' is meant, then the inscription on the statue would indicate that Jesus was born sometime in the late fall or early winter because such a timeframe aligns well with a nine month gestational period.[32]

Γένεσις is a difficult term to precisely define because often its contextual usage leaves open to question whether someone's birth or conception is being spoken of. However, no scholar has performed an exhaustive study of this word in the writings of Hippolytus and his community to determine what γένεσις means. Using the Thesaurus Linguae Graecae (TLG) database to search all of the more than 170,000 words in the Hippolytan corpus we find 134 instances of the word γένεσις.[33] Reading through every one, we find, as expected, that all are either ambiguous or do not apply to the discussion at hand, except for one:

> They draw [a horoscope] from the genesis [γένεσις] of the people who are being examined from surely [ἤτοι] the depositing of the seed and conception [σύλληψις] or [ἢ] from birth [ἔκτεξις].
>
> *Refutation of All Heresies 4.3.5*[34]

This work was written by Hippolytus of Rome, or at least a member of his community.[35] As we can see the above quotation directly refutes the notion that only 'birth' and not 'conception' is meant by the term γένεσις as Hippolytus

31 Those who claim it means 'conception' include Salmon, 'The Commentary of Hippolytus on Daniel,' 176; Bratke, 'Die Lebenszeit Christi im Daniel-Commentar des Hippolytus,' 146-148; Bonwetsch, 'Die Datierung der Geburt Christi in dem Danielcommentar Hippolyts,' 525. Those believing that the term refers to 'birth' include Usener, *Weihnachtsfest*, 368; Richard, 'Comput et chronographie chez Saint Hippolyte,' 48; Nautin, 'La controverse sur l'auteur de l'Elenchos,' 26; Nothaft, 'Early Christian Chronology,' 253 n. 17 and *Dating the Passion: The Life of Jesus and the Emergence of Scientific Chronology (200-1600)*, 47-48.

32 Many in antiquity held to a nine month gestational period, meaning that it would not have been unlikely for Hippolytus to do the same, see Cilliers, 'Vindicianus' 'Gynaecia' and Theories on Generation,' in *Magic and Rationality in Ancient Near Eastern and Graeco-Roman Medicine*, ed. H. F. J. Horstmanshoff and M. Stol (Leiden, 2004), 343-68, especially 361-64. Confirmation that Hippolytus must have believed that Jesus had a nine month gestational period comes from his *Chronicon* §686-87, as I will explain in the second section of this article.

33 This search covered every work ascribed to Hippolytus in the TLG database as of June 2010.

34 My Translation from Marcovich, *Hippolytus Refutatio Omnium Haeresium*, 94 lines 20-23.

35 Brent, *Hippolytus and the Roman Church in the Third Century*, 297-99; Marcovich, *Hippolytus Refutatio Omnium Haeresium*, 8-17.

considered either option valid. There is evidence, however, that Hippolytus seems to favor 'conception' as he qualifies it with the particle ἤτοι. According to Smythe §2858 ἤτοι is used first in a list of alternatives when it, 'contains the more probable choice.'[36] However, LSJ says that this distinction is not implied in later Greek.[37] Hippolytus may have favored the older syntactical usage because the entire treatise is overflowing with citations from classical writers.[38] Furthermore, Hippolytus continues the above passage by excoriating those who draw horoscopes on account of the foolishness of knowing when 'conception' (σύλληψις) actually occurs. Only afterwards does he clumsily attempt to criticize those who draw horoscopes based off of the 'birth' (ἔκτεξις) of an individual because, as our author awkwardly expresses, it is difficult to know when someone is actually born.[39] This argument would hold far more weight if our author knew that γένεσις usually refers to conception.

Additionally, word searches of authors outside of Hippolytus' community, but who lived during his lifetime, reveal evidence that γένεσις, when referring to a person, meant 'conception.' Galen, a contemporary of Hippolytus and a founder of western medicine, affirms in his work *On Semen* that γένεσις occurs in the womb.

> . . . but with the genesis [γένεσις] of the animal in the womb the matter [semen] is abundant.
>
> GALEN, *On Semen* 1.13.17[40]

Clement of Alexandria, an older Christian contemporary of Hippolytus, agrees:

> It is not therefore frequent intercourse by the parents, but the reception of it [the seed] in the womb which corresponds with genesis [γένεσις].
>
> CLEMENT OF ALEXANDRIA, *Stromata* 3.12.83.2[41]

36 H. W. Smyth and G. Messing, *Greek Grammar* (Cambridge, MA, 1956), 648.

37 Liddell, Scott, Jones, 'ἤ,' *The Liddell-Scott-Jones Greek-English Lexicon*, 761.

38 In fact, the treatise is the source of much unique information on classical philosophers. See G. S. Kirk and J. E. Raven, *The Presocratic Philosophers: A Critical History with a Selection of Texts* (Cambridge, 1957), 1-7.

39 *Against All Heresies* 4.3.5-4.4.7.

40 My translation from Ph. De Lacy, *Galen: On Semen*, CMG 5.3.1 (Berlin, 1992), 112 lines 14-15.

41 My translation from O. Stählin, *Clemens Alexandrinus Band 2 Stromata Buch I-VI*, GCS 15 (Leipzig, 1906), 234 lines 12-13.

And he says the same in another quote:

> And whenever angels give good news to the barren, they introduce souls before conception. And in the Gospel 'the babe leapt' as a living being. And the barren are barren on account of this, that whenever there is union for the depositing of seed the soul is not introduced, so as to secure conception and genesis [γένεσις].
>
> CLEMENT OF ALEXANDRIA, *Eclogae Propheticae* 50.2-3[42]

Methodius of Olympus, who flourished shortly after Hippolytus, states:[43]

> For the beginning of the genesis [γένεσις] of men is the casting of seed into the passages of the womb.
>
> METHODIUS OF OLYMPUS, *Banquet of the Ten Virgins* 2.1.31[44]

Lastly, the word γένεσις is used only five times in the New Testament and twice relating to Jesus. It is used in Matthew 1:1, 'The book of the genesis [γένεσις] of Jesus Christ,'[45] where it perhaps means 'genealogy' or 'origin.' The second time it is used is in Matthew 1:18 where it may reference Jesus' conception:[46]

> The genesis [γένεσις] of Jesus Christ happened in this way. After his mother Mary was betrothed to Joseph, before they came together, she was found with child by the Holy Spirit.
>
> MATTHEW 1:18[47]

Hippolytus may have had this very verse in mind when he wrote 'γένεσις of Christ' in his *Canon*. Interpreting this phrase as referring to 'conception' therefore seems to be the most logical avenue to follow given evidence from the

42 My translation from O. Stählin, *Clemens Alexandrinus Band 3 Stromata Buch VII und VIII, Excerpta ex Theodoto—Eclogae propheticae quis dives salvetur—Fragmente*, GCS 17 (Leipzig, 1909), 151 lines 5-10.

43 Like Methodius, Philo of Alexandria makes a similar reference to 'genesis' in his work *Allegorical Interpretation* 3.185. F. H. Colson and G. H. Whitaker, trans., *Philo in 10 Volumes (and Two Supplementary Volumes)*, vol. 1, LCL 226 (London, 1981), 426 lines 12-13.

44 My translation from V. Debidour and H. Musurillo, eds., *Méthode d'Olympe: Le Banquet*, SC 95 (Paris, 1963), 70 lines 29-30.

45 My translation from *Novum Testamentum Graece*, Nestle-Aland, 28th ed.

46 Hippolytus, however, may have had access to the variant reading γέννησις in Matthew 1:18, so this piece of evidence cannot be viewed as decisive.

47 My translation from *Novum Testamentum Graece*, Nestle-Aland, 28th ed.

writings of Hippolytus, his contemporaries, and the Gospel of Matthew. Hence, in Hippolytus' mind Jesus would then have been born in the late fall or early winter, depending on how he calculated Jesus' gestational period.

2 The *Chronicon* of Hippolytus

To further specify the date in which Hippolytus thought Jesus was born, we must look to his *Chronicon*.[48] This work has a complicated transmission history[49] and the portion of it which concerns us is primarily preserved in a Latin translation called the *Liber Generationis I*, with an Armenian version serving as the other important textual witness.[50]

In the *Chronicon*, Hippolytus uses the Bible to count the years from the creation of the world until his present day, 235 CE. He does this in two different ways. The shortest method is in §689-700 where he calculates the length of time between various biblical Passovers,[51] adopting the same annual chronology for Passovers he presented in the *Canon*. He only however refers

48 The *Chronicon* is listed on the famous statue of Hippolytus, ICUR #7.19933 line 8; Brent, *Hippolytus and the Roman Church in the Third Century*, 270-74 and is also mentioned by Eusebius, *Ecclesiastical History* 6.22 in F. Winkelmann. *Eusebius Werke II. Die Kirchengeschichte*, GCS NF 6.2 (Berlin, 1999), 568 lines 14-17.

49 A portion of it is preserved in the original Greek while three different Latin versions cover the remainder: the *Liber Generationis I*, the *Liber Generationis II* and the *Chronicon Alexandrini* also known as the *Excerpta Barbari*. An Armenian version is also extant. Evidently Georgian and Syriac versions were in circulation, but are no longer extant. See the introduction in Helm and Bauer, *Hippolytus Werke: Die Chronik*, for discussion and T. Greenwood, '"New Light from the East": Chronography and Ecclesiastical History through a Late Seventh-Century Armenian Source,' *Journal of Early Christian Studies* 16 (2008), 197-254, especially 209-16; K. Kekelidze, 'The Chronicle of Hippolytus (of Rome) and the Georgian Historian Leonti Mroveli,' in *Languages and Cultures of Eastern Christianity*., ed. St. H. Rapp and P. Crego, The Worlds of Eastern Christianity, 300-1500: 5 (Burlington, VT, 2012), 97-104; W. Witakowski, 'The Division of the Earth between the Descendants of Noah in Syriac Tradition,' *Aram* 5 (1995), 635-56.

50 The *Liber Generationis I* is by far the most faithful to the extant Greek text, while the other two Latin versions are abbreviated and vary widely from it. This is quite clear after comparing the sections of the translations that overlap with the Greek. The Armenian generally follows the *Liber Generationis I* but is not directly based on the original Greek text. See Helm and Bauer, *Hippolytus Werke: Die Chronik*, XII. In this article I follow Bauer's reconstruction and quote from the *Liber Generationis I* in Helm and Bauer, *Hippolytus Werke: Die Chronik*, unless otherwise indicated.

51 Nothaft, *Dating the Passion: The Life of Jesus and the Emergence of Scientific Chronology (200-1600)*, 42-43.

to the year in which the Passover occurred and not the month and day as he does in the *Canon*, likely because these more specific dates had been proven incorrect shortly after he published the *Canon*. As with the *Canon*, Hippolytus is careful to mention the beginning and end of Jesus' life:

Jesus' life in the Chronicon calculated by Passovers[52]

> §698 And from the generation [*generatio*] of Christ, after 30 years, when the Lord suffered, the Passover was celebrated. For He Himself was a righteous Passover. §699. And from the Passion of the Lord until the 13th year of the Emperor Alexander Caesar, 206 years, the Passover was served, which has been served by us in commemoration of our Lord Jesus Christ. §700. Therefore all the years from Adam up until this day are 5,738 years.
>
> CHRONICON §698-700[53]

This passage harmonizes with the *Canon* perfectly. It states that Jesus died 206 years before year 13 of Emperor Alexander, which was 235 CE;[54] this means that Jesus died around 29 CE, which corresponds with the *Canon* precisely. The *Chronicon* also states that Jesus was 30 years old when he died, meaning that he was born in 2 BCE, exactly as stated in the *Canon* when we count from Jesus' conception. This adaptation of the *Canon's* chronology also indicates that the Latin word *generatio* likely refers to the Greek word γένεσις and hence conception. This is important for understanding the *Chronicon's* other chronological passage about Jesus.

This second reference to Jesus is embedded in a different chronology where Hippolytus adds up all the years of the patriarchs and biblical kings.[55] Towards the end of this chronology, Hippolytus again mentions the beginning and end of Jesus' life:

Jesus' life in the Chronicon calculated by the years of patriarchs and kings[56]

> (§686)... from Adam until the transmigration into Babylon under Jeconiah, 57 generations, 4,842 years, 9 months. (§687) And after the transmigration into Babylon until the generation [*generatio*] of Christ,

52 This title is my own addition and is added for clarity.

53 My translation from the *Liber Generationis I*.

54 R. V. N. Hopkins, *The Life of Alexander Severus* (Cambridge, 1907), 260-70.

55 *Chronicon* §22-43, 614-88, this chronology is awkwardly divided between a lengthy excursus on ethnography and geography.

56 This title is my own addition and is added for clarity.

> there were 14 generations, 660 years, and from the generation [*generatio*] of Christ until the Passion there were 30 years and from the Passion up until this year which is year 13 of the Emperor Alexander, there are 206 years. (§688) Therefore all the years from Adam up until year 13 of the Emperor Alexander make 5,738 years.
>
> CHRONICON §686-688[57]

§687-688 harmonize perfectly with the chronology of Jesus' life presented in both *Chronicon* §698-700 and the *Canon*. Yet §686 introduces a contradiction by adding an extraneous '9 months.' Taken together, §686-687 indicate that the *generatio* of Christ was 5,502 years and 9 months from creation of the world, while §687-688, and its parallel passage in §698-700, state that the *generatio* of Christ was 5,502 years from creation, thereby omitting the 9 months.[58] The same contradiction is also present in the Armenian translation of the *Chronicon*.[59]

The contradiction is very likely introduced in the first clause of §687, which details the length of time between the transmigration into Babylon and the *generatio* of Christ, because the remaining three chronological points of reference—the *generatio* of Christ to the Passion and from the Passion to Emperor Alexander—are confirmed by both the *Chronicon* §698-700 and the *Canon*.[60]

Though the extra nine months are supported by our two most reliable witnesses, the *Liber Generationis I* and the Armenian translation, it is possible that there has been a scribal interpolation. However, if we examine the preceding chronology from Adam to Christ (§22-43, 614-688) it is striking that Hippolytus only gives extraneous months on two occasions, once in §654 where he adds six months to David's reign,[61] and in §675 where he states that Jehoahaz

57 My translation from the *Liber Generationis I*.

58 This contradiction is likely why no scholar has ever, to my knowledge, noticed that Hippolytus claims that the generation of Jesus was 5502 years and 9 months from creation. Also, some have simply referenced *Chronicon* §687-688 and thus have neglected the preceding information about the extra nine months in §686. See for example Förster, *Die Feier der Geburt Christi in der Alten Kirche*, 46-47.

59 The Armenian translation uses the same word in both instances, *i tsnundn K'ristosi* and *i tsnndenēn K'ristosi* respectively, which both mean 'birth'. I am deeply grateful for Dr. Timothy Greenwood, who looked into the wording in the Armenian translation on my behalf. (Personal correspondence November 11, 2011).

60 Both *Chronicon* §698-700 and the *Canon* also place the three dates on the Passover, meaning that we cannot expect nine months to be made up by those dates as the Passover takes place around the same time every year.

61 This number is agreed upon by all four witnesses to this passage.

reigned three months.[62] This argues that the extra nine months are original to the chronology.

Bauer hypothesized that Hippolytus simply ignored the extraneous nine months in some of his later calculations,[63] but I think this unlikely for Hippolytus to do since he claimed in the *Chronicon* that he wanted to achieve 'precise knowledge' in his chronology and to 'know completely in exactness.'[64] Furthermore his insistence on giving extraneous months throughout his chronology[65] also argues that he would not have simply ignored extra months in his final calculations, especially since he omits the extra months immediately after he last mentioned them.

The simplest solution to this problem is theorizing that Latin word *generatio* in *Chronicon* §687 has been twice used to translate two different Greek words, one referring to 'birth' and the other to 'conception.' If so, the extra nine months would be accounted for by Jesus' nine month gestational period.

There is good reason for suspecting that such a mistranslation has occurred. As my word study has shown, γένεσις was a difficult word to precisely define and also confusingly similar to the Greek word for 'birth' γέννησις. For example, Philoxenus, who directed translating the Bible into the Philoxenian Syriac version, made a point of differentiating between γένεσις 'becoming' and γέννησις 'birth' in his *Commentary on John*. He however ends up confusing the two words saying,

62 All four witnesses give different time frames for the reign of Jehoahaz. The Armenian claims it was three years, the *Liber Generationis II* omits the length of reign, the *Liber Generationis I* says it was four months, while the *Barbarus* claims it was three months. Though the *Barbarus* is often an unreliable witness, here it seems to be correct because three months is what is given in 2 Kings 23:31. Helm and Bauer, *Hippolytus Werke: Die Chronik* 168, Table 6 Excursus F reconstruct the *Liber Generationis I* and the Armenian witnesses and agree that both would have contained an extra nine months at the point in the chronology when Jesus was born. They furthermore hypothesize that the original reading must have been 'three months' because the secondary witnesses to the *Chronicon* all state this. The only other part of the chronology which gives an extraneous month is in §628 where the *Liber Generationis I* gives an obviously corrupt reading which states that the Exodus happened 'in the 70th month and third year of Aaron.' However this is contradicted by the Armenian which omits any mention of months.

63 Helm and Bauer, *Hippolytus Werke: Die Chronik*, 115.

64 My translation from *Chronicon* §19-20 in ibid.

65 §654 and 675.

> The reading of the words γένεσις 'becoming' and γέννησις 'birth' are similar to one another in the Greek language, because two nwns[66] are placed one after another in 'becoming,' but only one in 'birth'.[67]

Jerome also missed the nuance of γένεσις in the first chapter of the Gospel of Matthew because he used *generatio* to translate γένεσις in Matthew 1:1 and 1:18 and the same word for γενεά in Matthew 1.17[68] A similar translation move is made by three other Syriac translations of Matthew, which translated γένεσις as if it may only refer to birth.[69] Only the literal Harklean gets it right, translating γένεσις as ܪܘܡ.[70] It therefore seems reasonable that the Latin and Armenian translators of Hippolytus' Greek *Chronicon* made a similar mistake as Jerome and his fellow Syriac translators.

When reconstructing the original meaning of *Chronicon* §687 it is clear that the second usage of *generatio* must refer to 'conception' because the chronology from that point onward matches that given in the *Canon*, where the word γένεσις is used to describe Jesus' conception.[71] The first usage of *generatio* would then therefore refer to 'birth.'[72] Given this, the original Greek of the passage probably read something like the following:

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66 The Syriac equivalent of the Greek letter Nu.

67 A. M. Butts, 'Language Change in the Wake of Empire: Syriac in Its Greco-Roman Context' (PhD Dissertation, University of Chicago, 2013), 43, who translated from A. de Halleux, ed., *Philoxene de Mabbog: Commentaire du prologue johannique,* (*Ms. Br. Mus., Add. 14, 534*), CSCO 380-381 (Louvain, 1977), 43.17-19. I would like to thank Aaron Butts for first bringing this quotation to my attention.

68 R. Gryson, B. Fischer, and R. Weber, eds., *Biblia Sacra: Iuxta Vulgatam Versionem*, 4th ed. (Stuttgart, 1994).

69 For γένεσις in Matthew 1:1 the Curetonian and Sinaitican read ܬܪܥܘܬܐ, while the Peshitta reads ܬܘܠܕܬܐ. For the same term in Matthew 1:18 all three versions have ܝܠܕ. All three however translate the Greek term γενεά as ܕܪܬܐ.

70 The Syriac for the above versions is taken from G. A. Kiraz, ed., *Comparative Edition of the Syriac Gospels: Aligning the Sinaiticus, Curetonianus, Peshitta and Harklean Versions, Volume 1: Matthew*, 3rd ed. (Piscataway, N.J., 2004).

71 This chronology also matches *Chronicon* §698 where *generatio* also appears to refer to 'conception.'

72 Though this reconstruction requires Hippolytus to deviate from precise chronological order by first discussing the birth of Jesus and then discussing his conception, this is something that he does several times in the *Chronicon*, such as in §653, and 679-680.

Reconstruction of Jesus' life in the Chronicon calculated by the years of patriarchs and kings[73]

> (§686)... from Adam until the transmigration into Babylon under Jeconiah, 57 generations, 4,842 years, 9 months. (§687) And after the transmigration into Babylon until the birth [γέννησις] of Christ, there was 14 generations, 660 years, and from the conception [γένεσις] of Christ until the Passion there was 30 years and from the Passion up until this year which is year 13 of the Emperor Alexander, there is 206 years. (§688) Therefore all the years from Adam up until year 13 of the Emperor Alexander make 5,738 years.
>
> *Reconstruction of Chronicon* §686-688[74]

In this sense Jesus was born 5,502 years 9 months from the creation of the world, but was conceived 5,502 years from creation and then died 30 years after his conception.

According to this reconstruction, Hippolytus would therefore have believed that Jesus was born nine months after the anniversary of the creation of the world. If Hippolytus followed early Christian chronologists in believing that the world was created on or near both the Passover and the Vernal Equinox,[75] he then would have believed that Jesus was born sometime around December 25.

3 The Date of the Creation of the World and the Conception of Jesus

But on what date did Hippolytus believe the world was created? Our first piece of evidence comes from *de Pascha Computus* of 243 CE. In it, the anonymous computist states the following about when his predecessors thought the world was created:

73 This title is my own addition and is added for clarity.

74 There are of course other possibilities for the original Greek wording. For example, Hippolytus may have instead followed the model in the Gospel of Matthew and used γενεά from Matthew 1:17 to indicate Jesus' generation or birth and γένεσις from Matthew 1:18 for conception.

75 For example, Julius Africanus, Annianus, *De Pascha Computus* 4, and George Syncellus, see Nothaft, 'Early Christian Chronology,' 263-64.

> That day is now understood to be 25 March. Some from among us, who previously desired to exhibit this new month and indicate the days of Passover according to the Jews, reckoned from it.
>
> *De Pascha Computus* 4[76]

As mentioned previously, *de Pascha Computus* is believed to have corrected Hippolytus' *Canon*,[77] likely making Hippolytus one of the predecessors who held to a March 25 date of creation. In chapters 1-6 of the same work, the computist describes how he and his predecessors interpreted various passages in Exodus and Genesis as indicating that the moon was created as a full Passover moon. The computist goes on to refer to a debate about whether this first Passover moon was seen on the fourth day of creation or the fifth. The specifics of the controversy are unclear, but it seems that some parties held that even though Genesis indicates that the moon was created on the fourth day of creation, it would not have appeared in the sky until after the sun had set, thus meaning that it was not seen until the fifth day of creation.[78]

The computist places himself firmly in the camp that held that the moon and the sun were created together on the fourth day of the week and criticizes his predecessors for being incorrect in this matter. He writes, 'Our predecessors also, [followed] after the manner of the Hebrews . . . but without understanding the first day of the first month and so [fell] into error.' And then after some mathematical computations he goes on to say,

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76 Translation from G. Ogg, *The Pseudo-Cyprianic De Pascha Computus* (London, 1955), 3.

77 It is believed that *De Pascha Computus* was written to correct the *Canon* of Hippolytus because it refers to predecessors who incorrectly created a table of Passovers in 16 year cycles (*De Pascha Computus* 6). Hippolytus and Demetrius of Alexandria are the only two writers known to have done this before *De Pascha Computus* was written. See Mosshammer, *The Easter Computus and the Origins of the Christian Era*, 109-16. Furthermore, *De Pascha Computus* 14 shows a striking similarity between its interpretation of the final 'week' of Daniel's prophecy (Daniel 9:24-27) and Hippolytus' own interpretation of the same passage in his *Com. Dan*. 4.34.1-4.35.3. *De Pascha Computus* 4 also claims that his predecessors ended their Passover cycle on April 13, exactly as Hippolytus does in his *Canon*. Lastly, *De Pascha Computus* is written in Latin, and hence is likely to have referred to Roman predecessors such as Hippolytus. G. Ogg, 'The Computist of AD 243 and Hippolytus,' *The Journal of Theological Studies* 191-92 (1947), 206-7 argues that Hippolytus was not a predecessor because only some of the mistakes which the computist claims his predecessors made, were made by Hippolytus. However, it seems reasonable that the computist was not claiming that Hippolytus made all the mistakes, only some of them. Mosshammer agrees, see Mosshammer, *The Easter Computus and the Origins of the Christian Era*, 126. See also Nothaft, 'Early Christian Chronology,' 253 n. 17.

78 Presumably this debate occurred because in the book of Genesis days begin at nightfall not at midnight or at daybreak. See for example Genesis 1:5.

> But that being so, the moon, which was engaged to commence the night, cannot have been made after the going down of the sun and then have become visible in the sky; indeed it was under an obligation to be visible from daybreak and to accompany the sun, along with which it had attained to a very high office . . . And thus the moon, which had been one of 15 days [i.e. a full moon] when made on the 28 March . . .[79]

If the anonymous predecessors believed the opposite, then they would have held that the Passover Moon was not seen (or even created) until nightfall on Thursday, March 29, the fifth day of creation. Fortunately, we can discover if Hippolytus was indeed one of these predecessors. Because Hippolytus intended for his *Canon* to calculate all Passovers past, present, and future, we can use it to discover the date of the very first Passover. Hippolytus tells us in his *Chronicon* that Jesus was conceived on the Passover and that this was exactly 5,502 years from creation. Because the *Canon* and the *Chronicon* use the same chronological system,[80] we can calculate backwards 5,502 years from the 'γένεσις of Christ' in the *Canon* to find Hippolytus' date for the first Passover. Counting the annual cycles in the *Canon* inclusively,[81] we do in fact reach Thursday, March 29.[82]

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79 *De Pascha Computus* 6. Translation from Ogg, *The Pseudo-Cyprianic De Pascha Computus*, 4.

80 Both documents utilize the same chronological system because they give the same dates for the beginning and end of Jesus' life and because *Chronicon* §689-700 gives a chronology of seven famous biblical Passovers which corresponds with the chronology of the seven biblical Passovers noted in the *Canon*. See Richard, 'Comput et Chronographie Chez Saint Hippolyte,' *Mélange de science religieuse* 7 (1950), 237-68 at 250, 252.

81 Hippolytus alternated between counting inclusively and exclusively. For example, in his *Chronicon* §693 and in his *Canon* he gives 41 years between the Exodus and Joshua and therefore counts exclusively in both instances. He also counts exclusively for the age of Jesus in both works. At other times Hippolytus used an inclusive counting method. For example in his *Chronicon* §695 he counts inclusively to determine the number of years between Hezekiah and Josiah and then he adds another inclusive count upon this in §696 to determine the years between Josiah and Ezra, meaning that he is actually one year off from a pure inclusive count and two years off from an exclusive count, while in the *Canon* he counts exclusively for both of these dates. He makes the same mistake repeatedly in the notes in the *Canon* labeled 'according to Daniel.' See Salmon, 'The Commentary of Hippolytus on Daniel,' 170-73. Inconsistencies like these are more understandable when one considers how difficult Greek and Roman mathematical notation was.

82 I am indebted to Ogg, 'Hippolytus and the Introduction of the Christian Era,' 6, who first attempted this calculation, though he neglected to realize that one must calculate inclusively and did not explain why Hippolytus thought the moon was first seen on the fifth day of creation, not the fourth. Ogg's conclusions about a March 29 date for the

Because our calculations above show that Hippolytus believed that the very first Passover occurred on March 29, Thursday, the 5th day of the week, he must have therefore marked Sunday, March 25 as the first day of creation.[83] This agrees exactly with what the anonymous computist said about his predecessors. Therefore, *Chronicon* §686-688 appears to claim that Jesus was born 5502 years and 9 months from this point, which corresponds with December 25.

Summary and Conclusion

Given the many interlocking arguments presented in this paper, I think it would be best to summarize them and analyze their various strengths and weaknesses. I discussed in Section 1 the term 'γένεσις of Christ' in the *Canon* and argued that it most likely refers to conception. The word γένεσις is rather slippery and can mean either conception or birth, but all the evidence of its usage in Hippolytus' writings, those of his contemporaries and in the gospel of Matthew weighs in favor of 'conception.' This would place the birth of Jesus sometime in late fall or early winter, depending on how he calculated the gestational period of Jesus.

In Section 2, I analyzed a contradictory passage in *Chronicon* §686-688 which claims that the *generatio* of Jesus was both 5502 years and 5502 years and 9 months from Adam. This contradiction seems unlikely to have been a scribal error or later interpolation because it is embedded in Hippolytus' previous chronology. It also seems unlikely that Hippolytus would have made an error or chose to ignore the extraneous nine months because both cases would have required him to record the extraneous months before immediately disregarding them. Furthermore Hippolytus casts the entire *Chronicon* as an effort to be 'precise' and 'exact.' The most likely solution, I argue, is that the Latin

first Passover has been supported by the following scholars: Roll, *Toward the Origins of Christmas*, 87; Nothaft, *Dating the Passion*, 43.

83 Another way of confirming the date of March 25 is by assuming that Hippolytus would not have thought that God, when he created the moon and the sun, would have positioned them in a way that required the immediate intercalation of a solar day or lunar month, but instead would have begun a fresh lunar and solar cycle which would have required the intercalation of a solar day or lunar month at the farthest point possible in Hippolytus' calendar. The date which is the farthest from any intercalation in the *Canon* is March 29, thus implying that Hippolytus thought that this was the date on which the Passover Moon was first celebrated on the first year of the world. Because the moon was not seen until fifth day of the week, then Hippolytus must have believed that Sunday, the first day of creation would have been five days before March 29, or March 25.

and Armenian translators probably mistranslated two Greek words—γένεσις and γέννησις—which, though quite similar, refer respectively to conception and birth. Mistranslations of this kind occur frequently among ancient Christian translators making such a solution all the more plausible. If my reconstruction of the passage is correct, it would indicate that Hippolytus believed that Jesus was born nine months after the anniversary of the creation of the world.

In Section 3, I attempted to determine when Hippolytus thought the world was created by comparing calculations in his *Chronicon* and *Canon*. This revealed that he believed that the first Passover on the first year of the world occurred on Thursday, March 29. Given evidence provided by *de Pascha Computus* Hippolytus would have therefore believed that the world was created five days earlier on March 25, meaning that, in Hippolytus' mind, Jesus would have been born nine months from the anniversary of creation, or December 25.

Though in the above sections I believe I have argued for the most probable interpretation of the evidence, none of my conclusions are what I would call 'certain' and room for different interpretations remain. The strongest criticism is probably that even if Hippolytus believed Jesus was born exactly 5502 years and 9 months from the starting point of his chronology, the terminology Hippolytus uses to reference this originating point is fairly hazy. For example, in *Chronicon* §1 Hippolytus says that he is starting his chronology 'from the creation of the world,' likely March 25, but in §22 and §688 he reckons his chronology 'from Adam,' which, interpreted literally, indicates a point of origin on the sixth day of creation, March 30. In §689-700, where Hippolytus reckons years based on the Passover, he appears to mark the Passover as the turning point of the year and also the originating point of his chronology, implying a starting point of March 29, or on whatever date the Passover happened to fall in the year in which Jesus was conceived.

This last possibility is particularly intriguing because the *Canon* specifically marks the Passover of April 2 of 2 BC as the γένεσις of Christ. Nine months from this point would of course be January 2, not December 25. But it seems unlikely that Hippolytus used this date because, by the time he wrote the *Chronicon* in 235 CE, the calculations he made in 222 CE in his *Canon* had become obviously incorrect for more than a decade, and so it would be strange for him to use such flawed calendar dates.[84]

84 In *Chronicon* §689-700, Hippolytus did of course rely on the *Canon* for determining the years in which various Passovers occurred, but he did not reuse the month and calendar dates. The reason for this is most likely that these more specific dates had been proven

While it is possible that Hippolytus calculated from March 30, the day on which Adam was created, or from March 29, the date of the first Passover, it seems more likely that he preferred March 25 because *de Pascha Computus* states that its predecessors reckoned from this starting point. This is also exactly where he begins his *Chronicon* in §1. In this case the phrase 'from Adam' should be read as simply an idiomatic phrase referring to creation generally and not as referring specifically to the sixth day of creation. His brief Passover calculations in §689-700 should also be contextualized as an 'alternate demonstration,' just as Hippolytus himself tells us they are in §689. Hence they should not be used for determining the starting point for Hippolytus' main chronology derived from the years of the patriarchs and kings in *Chronicon* §22-43, 614-688, where he indicates that Jesus was born nine months from the anniversary of the creation of the world.

But whatever date Hippolytus chose for the birth of Jesus, it is clear that he calculated it based on astronomical computations involving the Passover in conjunction with various beliefs about the creation of the world and Jesus' gestational period, just as the Calculation Theory has always maintained. This line of interpretation also helps to explain the vexing passage in Clement of Alexandria's *Stromata* 1.21.145-146, where he lists various possible dates for several key points of Jesus' life. Here he states that Jesus was born [ἐγεννήθη] 194 years, 1 month, and 13 days before the death of Emperor Commodus, likely January 6.[85] He then says that some have 'rather superfluously' [περιεργότερον] placed Jesus' γένεσις on the 25th of the Egyptian month of Pachon, or May 20.[86] Scholars have hitherto read this as referring to birth, but now it seems more likely to refer to conception. Later on in the same passage, Clement says that some also believe that Jesus 'came to be' [γεγενῆσθαι] on the 24th and 25th of Pharmuthi,[87] March 20 or 21.[88] The 25th of Pharmuthi coincides with the Vernal Equinox in the Egyptian calendar[89] and also matches one of the possible dates which Clement gives for the Passover of Jesus' crucifixion.[90] Γεγενῆσθαι seems

incorrect shortly after their publication in the *Canon*, while the more general annual dates would have still been valid.

85 If Clement was using the older Alexandrian calendar than the date of November 18 is likely. See Roland H. Bainton, 'Basilidian Chronology and New Testament Interpretation,' *Journal of Biblical Literature* (1923), 81-134, at 102-104.

86 Bainton, 'Basilidian Chronology,' 96.

87 *Stromata* 1.21.146.4 in Stählin, *Clemens Alexandrinus Band 2 Stromata Buch I-VI*, 90 line 28.

88 Bainton, 'Basilidian Chronology,' 109-110.

89 Bainton, 'Basilidian Chronology,' 84.

90 *Stromata* 1.21.146.3 in Stählin, *Clemens Alexandrinus Band 2 Stromata Buch I-VI*, 90 lines 26-27.

to refer to conception because of how it is contrasted with Clement's previous use of ἐγεννήθη. If true, Clement then witnesses to a tradition about the conception of Jesus which appears to be fundamentally the same as Hippolytus' in that both hold that Jesus was conceived and crucified on the Passover and Vernal Equinox. Their major difference is calendrical, with one holding to the Vernal Equinox of the Egyptian calendar (March 21) and the other to the Roman calendar (March 25).[91]

Hippolytus' use of the Roman calendar and its placement of the Vernal Equinox on March 25 is therefore a key reason why he seems to have chosen December 25 as the birthday of Jesus. While it seems probable that Hippolytus himself chose December 25, if he did not, then it is clear that the slightest manipulation of his methods would have easily resulted in its selection.

Nothaft has recently argued that Julius Africanus most likely also chose December 25 in 221 CE using similar methods. This, coupled with Hippolytus' probable choice around the same time, further argues that the selection of December 25 as the birthday of Jesus occurred sometime in the early third century, more than 100 years before its earliest explicit attestation in the *Chronography of 354*.

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91 Of course, Hippolytus seems to have assumed an exact nine month gestational period while Clement seems to have only approximated nine months.