

Paul -

Here are a few items from my file. Most of the stuff in there was too lengthy - so I tried to pick a few items that are direct and ~~thru~~ to the point. I included the article by Humphries, and Waddington which appeared in "Nature" magazine in 1983.

I also included some items I wrote regarding the problem of "three days and 3 nights".

Bonnie



# Dating the Crucifixion

Colin J. Humphreys\* & W. G. Waddington\*

Department of Metallurgy and Science of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, UK

*The date of the Crucifixion has been debated for many years, but there has been no agreement on the year nor the day. Astronomical calculations have now been used to reconstruct the Jewish calendar in the first century AD and to date a lunar eclipse that biblical and other references suggest followed the Crucifixion. The evidence points to Friday 3 April AD 33 as the date when Jesus Christ died.*

THE only certainty about the date of the Crucifixion is that it occurred during the 10 years that Pontius Pilate was procurator of Judaea (AD 26–36). Nearly every year in this period has its advocates (see, for example, ref. 1) while the day of the execution is also uncertain since there appears to be a difference of one day between the date given by the Gospel of John and that indicated by the Synoptics: Matthew, Mark and Luke.

In what follows we have set out to reconstruct the Jewish calendar in the first century AD, improving on the accuracy of previous versions. We have sought to reconcile the documentary evidence that exists with our reconstruction of the Jewish calendar and we have used calculations of the occurrence of a lunar eclipse which, if accepted, allow the day, month and year of the Crucifixion to be determined precisely.

## Biblical evidence

Tacitus<sup>2</sup> agrees with the four gospels that the Crucifixion took place during the period when Pontius Pilate was procurator of Judaea, between AD 26 and AD 36. All four gospels agree that Jesus died a few hours before the beginning of the Jewish sabbath (nightfall on a Friday) and—within a day—that it was the time of the Passover, the annual Jewish feast held at the time of a full Moon.

This evidence alone compels us to reject many of the dates suggested in the past. Thus, one of the earliest traditions, going back to Tertullian (AD 200), gives the date as 25 March AD 29. This date was not accepted everywhere throughout the early church and we now know from astronomical calculations that the time of the Passover Moon in AD 29 was in April, not March.

Passover time was precisely specified in the official festival calendar of Judaea, as used by the priests of the temple (see, for example, ref. 3). Lambs were slaughtered between 3 p.m. and 5 p.m. on the 14th day of the Jewish month Nisan (corresponding to March/April in our calendar). The Passover meal began at moonrise that evening, at the start of 15 Nisan (the Jewish day running from evening to evening) (*Leviticus* 23, 5; *Numbers* 28, 16). John's Gospel differs from the other three in stating that the day of Jesus' trial

and execution was that before Passover (*John* 18, 28 and 19, 31), on 14 Nisan. The precise interpretation of the Synoptics is less unambiguous. Here, briefly, are three of the many possible interpretations which have been proposed.

(1) A straightforward reading of the Synoptics indicates that the Last Supper was a Passover meal, eaten at Passover time (in the evening at the start of 15 Nisan), with the Crucifixion occurring later that Jewish day, on 15 Nisan (see for example *Mark* 14, 12). This disagrees with John's date of 14 Nisan (see *Jeremias*<sup>4</sup>).

(2) Many scholars, however, have suggested that the Last Supper described by the Synoptics was not strictly a Passover meal but that Jesus, knowing of his imminent arrest, held a Passover-like meal on the evening before (see *Luke* 22, 15). Certainly the Synoptics do not mention the eating of a Passover lamb, and this interpretation is in broad agreement with the Johannine account in which the farewell meal is explicitly stated to have occurred before the feast of Passover (*John* 13, 1). The timing also agrees, so that on this reading all four gospels give 14 Nisan as the Crucifixion date. (Variations on this basic interpretation are discussed in refs 3, 5 and 6.)

(3) Jaubert<sup>7</sup> has proposed that the Last Supper reported by the Synoptics was a strict Passover meal but held at Passover time as calculated using the 'sectarian' calendar followed by the Qumran community and others (see ref. 8). On this reading, the Last Supper was held on Tuesday evening, at the start of the Jewish Wednesday (the sectarian calendar Passover day, and recorded by the Synoptics), the Crucifixion was on Friday (all four gospels) and the official

Passover was on Saturday (recorded by John), in which case all four gospels again give 14 Nisan (official calendar) as the date of the Crucifixion.

Thus some scholars believe that all four gospels place the Crucifixion on Friday, 14 Nisan and others believe that, according to the Synoptics, it occurred on Friday, 15 Nisan. For generality, we assume at this stage that both dates are possible and set out to determine in which of the years AD 26–36 the 14th and 15th Nisan fell on a Friday. Previous attempts (see for example refs 4, 9–12) to use astronomy to resolve this ambiguity have shown that while the times of new and full



A full-page miniature from a thirteenth-century English manuscript from Salisbury, now at All Souls College, Oxford. (Courtesy Bodleian Library.)

\* Also Jesus College, Oxford (G.J.H.) and Department of Astrophysics, Oxford (W.G.W.).



Moons can be accurately specified, we do not know with what skill the Jews of the first century could detect the first faintly glowing lunar crescent after conjunction with the Sun. (The new Moon itself is invisible by definition.)

### Jewish calendar

Hitherto it has been customary to assume arbitrarily that the sickle of the new Moon would be invisible to the unaided eye until a certain length of time (usually 30 hours) had elapsed since conjunction. Fotheringham's more realistic criterion, based on the apparent position of the Moon in the sky at sunset, was modified and improved by Maunder<sup>12</sup>, but even that criterion is not rigorous, excluding several thin crescents that have been observed.

We have therefore computed the visibility of the lunar crescent as a function of time after sunset for the beginning of each lunar month in the period of interest. Whether or not the crescent Moon is visible depends on whether its contrast with the sky background exceeds the visual contrast threshold<sup>13</sup>. The lunar semidiameter and the position of the Moon in the sky at and after sunset have been evaluated from harmonic syntheses of the perturbed orbits of the Earth and Moon and the sky brightness for an observer at Jerusalem calculated as a function of the depression of the Sun below the horizon, as is the Moon's apparent surface brightness. At the latitude of Jerusalem, we find that the lunar crescent is first visible after sunset at a lunar altitude corresponding to approximately 0.5° less than that given by Maunder and this is consistent with many recent observations of the first sickle of the new Moon. Assuming normal atmospheric transparency, we obtain the results of Table 1.

Although in the first century AD the beginning of the Jewish lunar month (in the official calendar) was fixed rigorously by

Table 1 The date of 14 Nisan in Jerusalem, AD 26–36

Year (AD)	New Moon time	Deduced date of 14 Nisan
26	6 April 6:40	Sunday 21 April
27	26 March 20:05	Thursday 10 April*
28	15 March 2:30	Tuesday 30 March
29	2 April 19:40	Monday 18 April†
30	22 March 19:55	Friday 7 April†
31	12 March 0:25	Tuesday 27 March
32	29 March 22:10	Sunday 13 April*
33	19 March 12:45	Friday 3 April
34	9 March 5:25	Wednesday 24 March
35	28 March 6:10	Tuesday 12 April
36	16 March 17:50	Saturday 31 March

The time of new Moon is given as calculated apparent (sundial) time of conjunction for Jerusalem (±5 min). The deduced date is the Julian day (from midnight to midnight), starting at 6th hour 14 Nisan and ending at 6th hour 15 Nisan.

\* 14 Nisan AD 27 and AD 32 could have been on the following day if the new Moon was not detected due to poor atmospheric transparency.

† In each of these cases it is not impossible, but highly improbable, that 14 Nisan would have occurred on the preceding day.

Table 2 Calendrically possible dates for the Crucifixion

Jewish day	Source	Date (Julian calendar)
14 Nisan	John's Gospel and Synoptics (2, 3)*	Friday 11 April AD 27† Friday 7 April AD 30 Friday 3 April AD 33
15 Nisan	Synoptics (1)*	Friday 11 April AD 27† Friday 23 April AD 34‡

\* Synoptics (1, 2, 3) refers to the three possible interpretations in the text.

† There is some uncertainty, depending on the atmospheric conditions, as to whether this day was on 14 or 15 Nisan (see text and Table 1). We include all possibilities for completeness.

‡ Only in the case of a leap month being inserted because of exceptionally severe weather (see text).

astronomical observation, difficulties arise because of the Jewish use of intercalary (or leap) months. Twelve lunar months total approximately 11 days less than a solar year, but for agricultural and ritual purposes, lunar months were kept at roughly the same place in the solar year by the intercalation of a thirteenth month when necessary, roughly once every three years. In the first century AD, intercalation was regulated annually by proclamation by the Sanhedrin according to certain criteria<sup>4,8,9,14</sup>, one of the most important of which was that Passover should fall after the vernal equinox. If, towards the end of a Jewish year, it was estimated that Passover would fall before the equinox, the intercalation of an extra month before Nisan was decreed. Table 1 has been constructed on this basis.

Unfortunately, a leap month could also be decreed if the crops had been delayed by unusually bad weather (since the first fruits must be ripe for presentation on 16 Nisan) or if the lambs were too young. There are, however, no historical reports of the proclamation of leap-months in the years AD 26–36, so that it is possible that in some years Nisan was one month later than given in Table 1. Calculations show that in the period AD 26–36, if Nisan was one month later than given in Table 1, 14 Nisan would not fall on a Friday in any year and 15 Nisan would fall on a Friday only in AD 34 (April 23).

Table 2 lists all the possible dates of a Friday Crucifixion falling on either 14 or 15 Nisan. These are the only dates that are astronomically and calendrically possible for the Crucifixion. We now consider which of them can be eliminated by means of other available evidence.

### Further evidence

AD 27 is almost certainly too early. Luke 3, 1–2 carefully states that John the Baptist began his ministry in the fifteenth year of Tiberius Caesar and subsequently baptised Jesus. Depending on whether the Hellenistic (Roman) civil or the Jewish ecclesiastical reckoning is used, the fifteenth year (=340 Seleucid Era) would either have been autumn AD 28–29 or spring AD 29–30 (see ref. 15). In addition, most scholars believe that Pilate had been procurator for some time before the Crucifixion (see Luke 13, 1 and 23, 12).

Similarly, AD 34 is almost certainly too late, for it would conflict with the probable date of Paul's conversion. We can fairly confidently date the later events in Paul's life and, working back from these using time intervals given by Paul himself (for example, see Galatians 1, 18 and 2, 1) leads many scholars to infer Paul's conversion was in AD 34 (for example, see ref. 4). Moreover, AD 34 is only a possible Crucifixion date if the weather that spring had been exceptionally severe. There is therefore no positive evidence in favour of AD 34 and we exclude it. (The only eminent advocate of 23 April, AD 34 that we have come across is Sir Isaac Newton, whose chief reason seems to have been that 23 April is St George's Day.)

Having eliminated AD 27 and AD 34, we note from Table 2 that the Crucifixion must have occurred on 14 Nisan and that the interpretation of the Last Supper as a Passover meal held at the official time cannot be correct.

We remark that by this means, a scientific argument has been used to distinguish between different theological interpretations of the nature of the Last Supper. We have also shown that the Crucifixion occurred on 14 not 15 Nisan, so that Jesus died at the same time as the Passover lambs were slain. This is consistent with many New Testament statements such as "Christ our Passover is sacrificed for us" (1 Corinthians 5, 7).

By elimination, AD 30 and AD 33 are now the only two plausible dates for the Crucifixion. The earliest possible time at which Jesus can have begun his ministry is autumn AD 28 (see ref. 15) while John's gospel records three different Passovers, occurring in the ministry (including that at the Crucifixion). If this evidence is accepted, AD 30 cannot be the Crucifixion year and AD 33 is the only possibility.

This is also consistent with the reference in John 2, 20 which records that the Jews said to Jesus at the first Passover of his ministry that the temple had taken 46 years to build. Assuming



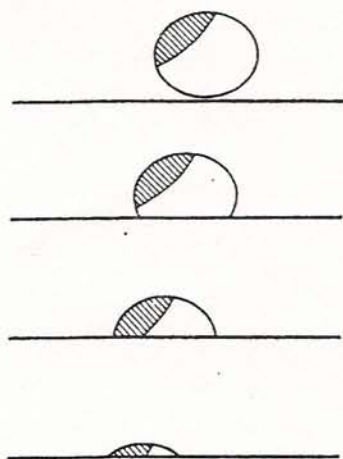


Fig. 1 Moonrise on Friday 3 April AD 33 as seen from Jerusalem. The effects of atmospheric refraction have been included and give rise to the distorted shape of the Moon. The time interval between successive diagrams is 45 s. The most probable colours of the Moon were: shaded area, red; unshaded area, yellow-orange.

that this refers to the inner temple (see ref. 1), the 46 years leads to AD 30 or 31, depending on how much preparation time was involved before building began. If the only Passovers of Jesus's ministry were the three explicitly mentioned in John's gospel, an AD 33 crucifixion implies a ministry of about 2½ years. Many scholars, however, believe that John omitted to mention a further Passover, in which case the ministry would have lasted for 3½ years.

On the two dates possible on calendrical grounds, scholarly opinion appears divided with some authors<sup>3,16</sup> preferring 7 April, AD 30, and others<sup>3,14</sup> 3 April, AD 33. We now consider further evidence that has not, to the best of our knowledge, been used in helping to date the Crucifixion—the subsequent occurrence of a lunar eclipse.

We first take up the meaning and significance of the references to the Moon being "turned to blood" in the Bible and also in the Apocrypha.

In Acts 2, 14–21 it is recorded that on the day of Pentecost, the apostles were accused by a crowd of being drunk and that Peter stood up and said "No, this is what was spoken by the prophet Joel: In the last days, God says, I will pour out my spirit on all people... I will show wonders in the heavens above... The Sun will be turned to darkness and the Moon to blood before that great and glorious day of the Lord shall come."

Table 3 Lunar eclipses visible from Jerusalem AD 26–36

Date*	Day†	Magnitude‡	Time eclipse started
15 Aug. AD 26	Friday	50%	23.16
31 Dec. AD 27	Wednesday	70%	23.45
14 June AD 29	Tuesday	Total	20.45
9 Dec. AD 29	Friday	45%	20.92
25 April AD 31	Wednesday	35%	21.58
19 Oct. AD 31	Friday	25%	4.82
3 April AD 33	Friday	60%	Occurred at rising Moon
27 Sept. AD 33	Sunday	85%	4.88
11 Feb. AD 35	Friday	55%	4.91
7 Aug. AD 35	Sunday	60%	20.30
31 Jan. AD 36	Tuesday	Total	Occurred at rising Moon
26 July AD 36	Thursday	Total	22.23

\* Julian Calendar.

† Julian day (from midnight to midnight as distinct from the Jewish day).

‡ Fraction of the area of the Moon covered at the midpoint of the eclipse.

It is not clear whether Peter was claiming that all the quoted prophecy from Joel had recently been fulfilled (for example ref. 17) or whether the words refer to the future, but in our view, the phrase "the Moon turned to blood" probably refers to a lunar eclipse, in which case the Crucifixion can be dated unambiguously.

Peter prefaces his quotation from Joel with the words "Let me explain this to you... this is what was spoken by the prophet Joel". He appears to be arguing that recent events had fulfilled the prophecy he was about to quote. If this interpretation is correct "the last days" began with Christ's first advent (see also 1 Peter 1, 20; Hebrews 1, 1–2) and the outpouring of the spirit (v. 17–18) commenced at Pentecost and "that great and glorious day" (v. 20) refers to the Resurrection. "The Sun will be turned to darkness" (v. 20) refers back to the 3 hours of darkness which occurred only 7 weeks previously, at the Crucifixion (Matthew 27, 45), and would be understood as such by Peter's audience.

As is well known, the mechanism by which the Sun was darkened may have been a khamsin dust storm. Since the darkened Sun occurred at the Crucifixion it is reasonable to suppose that "the Moon turned to blood" occurred that same evening, "before that great and glorious day", the Resurrection. This interpretation of Acts 2, 20 is supported by F. F. Bruce<sup>18</sup>.

Other documentary evidence suggests that on the day of the Crucifixion, the Moon appeared like blood. The so-called 'Report of Pilate', a New Testament Apocryphal fragment (see ref. 19), states that at the Crucifixion "the Sun was darkened; the stars appeared and in all the world people lighted lamps from the sixth hour till evening; the Moon appeared like blood". Although much of the Apocrypha cannot be used as primary historical evidence, Tertullian records that Pilate wrote a report of all the events surrounding the Crucifixion for the Emperor Tiberius. The manuscript fragments of the 'Report of Pilate' are all of later date, but may be partly based on the lost original<sup>19</sup>. On the other hand, the report may have used the Acts as a source, in which case it may be significant that the event described by Peter in which the Moon turned to blood is clearly stated to have occurred at the Crucifixion. It is of course also possible that the report is a late Christian 'forgery', but even such a document may be thought to reflect a widely held contemporary belief. In other words, the Report of Pilate is secondary supporting evidence that the Moon appeared like blood on the evening of the Crucifixion.

## The Moon turned to blood

The reason an eclipsed Moon is blood red is well known. Even though the Moon is geometrically in the Earth's shadow, sunlight still reaches it by refraction in the Earth's atmosphere and is reddened by having traversed a long path through the atmosphere where scattering preferentially removes the blue end of the spectrum. Descriptions of some well documented ancient eclipses have been compiled by Ginzel<sup>20</sup> and matched with calculated eclipse dates. We quote three examples: (1) The lunar eclipse of 20 September 331 BC occurred 2 days after Alexander crossed the Tigris and the Moon was described by Curtius (IV, 10 (39), 1) as "suffused with the colour of blood". (2) The lunar eclipse of 31 August AD 304 (probably) which occurred at the martyrdom of Bishop Felix, was described in *Acta Sanctorum* "when he was about to be martyred the Moon was turned to blood". (3) The lunar eclipse of 2 March AD 462 was described in the Hydatius Lemicus Chronicon thus: "on March 2 with the crowing of cocks after the setting of the Sun the Full Moon was turned to blood".

In the mediaeval European annals compiled by Pertz<sup>21</sup>, many lunar eclipses are described by "the Moon turned to blood", while Stephenson<sup>22</sup> considers that the prophecy of Joel (2, 31) clearly alludes to a lunar eclipse. It is therefore surprising that the link between the Crucifixion and a lunar eclipse does not appear to have been made before, although Bruce<sup>23</sup> approaches this conclusion.

Pilate's letter



## Lunar eclipses visible in Jerusalem AD 26-36

We have determined the eclipses relevant to our work by the use of the most comprehensive data available<sup>24</sup> as corrected by Stephenson<sup>25,26</sup> in the light of Babylonian records and long-term changes in the Earth's rate of rotation. All lunar eclipses (total and partial) visible from Jerusalem between AD 26 and AD 36 are listed in Table 3 which shows that in the period AD 26-36, there was only one lunar eclipse at Passover time visible from Jerusalem. The date, Friday, 3 April AD 33, is the most probable date for the Crucifixion deduced independently using other data. The interpretation of Peter's words in terms of a lunar eclipse is therefore not only astronomically and calendrically possible, but it also allows us with reasonable certainty to specify Friday, 3 April AD 33 as being the date of the Crucifixion. The random probability of a lunar eclipse occurring at moonrise on a particular date is, of course, small. We remark that in 1899 Chambers<sup>27</sup> noted that 3 April AD 33 coincided with a full Moon and "that full Moon suffered eclipse, but she emerged from the Earth's shadow about a quarter of an hour before she rose from Jerusalem" (D. Hughes, personal communication). Presumably this eclipse was considered irrelevant to the date of the Crucifixion since it was believed to be invisible from Jerusalem. However, the more accurate calculations presented here prove that this eclipse was visible.

## Visual appearance

Calculations show that this eclipse was visible from Jerusalem at moonrise. (All times quoted below are local Jerusalem times as measured by a sundial, and the probable error in the eclipse times is about  $\pm 5$  min.) The start of the eclipse at 3.40 p.m. was invisible from Jerusalem, being below the horizon. At its maximum at about 5.15 p.m., with 60% of the Moon eclipsed, the eclipse was still below the horizon from Jerusalem. The Moon rose above the Jerusalem horizon at about 6.20 p.m. (the start of the Jewish Sabbath and also the start of Passover day in AD 33) with about 20% of its disk eclipsed and the eclipse finished some 30 min later at 6.50 p.m.

Although at moonrise only 20% of the total area ( $\pi r^2$ ) of the Moon's disk was eclipsed (in the umbral shadow), this "bite" was positioned close to the top (leading edge) of the Moon. Figure 1 shows the appearance of the Moon at, and shortly after, moonrise on 3 April AD 33. As the umbral shadow (in which the Sun is geometrically entirely hidden) was near the top of the Moon, about 65% of the visible area of the rising Moon would initially have been seen as fully eclipsed (Fig. 1) while the remainder would have been in the penumbral shadow.

The coloration of eclipses varies greatly with atmospheric conditions. For partial eclipses, particularly with the Moon at high altitude, there is a large contrast difference between the obscured and unobscured part of the disk so that the Moon often appears almost white with a very dark "bite" removed. However for some partial eclipses the red colour of the umbral shadow is clearly visible. For example, Davis<sup>28</sup> has recently depicted in colour an eclipse sequence as seen by the human eye with the Moon low in the sky, when the blood red of the umbra in the partial eclipse phase is almost as vivid as when the eclipse is total.

For the eclipse of 3 April AD 33, the Moon was just above

the horizon and the most probable colour of the visible portion would have been red in the umbral shadow (shaded in Fig. 1) and yellow-orange elsewhere. The small yellow-orange region would have indicated that the Moon had risen, but most of its visible area would have "turned to blood". If in fact a massive dust storm was responsible for darkening the Sun a few hours previously, dust still suspended in the atmosphere would have tended to modify these colours, probably further darkening and reddening the Moon.

The eclipse of 3 April AD 33 would probably have been seen by most of the population of Israel, since the Jews on Passover Day would be looking for both sunset and moonrise in order to commence their Passover meal. Instead of seeing the expected full Paschal Moon rising they would have initially seen a Moon with a red "bite" removed (Fig. 1). The effect would have been dramatic. The Moon would grow to full in the next half-hour. The crowd on the day of Pentecost would undoubtedly have understood Peter's words as referring to an eclipse which they had recently seen.

## Conclusions

In ancient times eclipses (total or partial) were regarded as supernatural. Thus, the first century Jewish historian Flavius Josephus records that a lunar eclipse occurred on the same night as Herod the Great burnt alive Matthias and some other Jews for sedition. (This was a partial eclipse according to Ginzel<sup>20</sup>.) The lunar eclipse on the same night as the Crucifixion would similarly have been interpreted by many as a supernatural sign, and may well have been an important factor influencing the overnight change of mind of the Jews and Pilate towards the body of Jesus, leading to the placing of a military guard on the tomb.

The lunar eclipse may also be relevant to the well-known reference to a Crucifixion solar eclipse in some translations of Luke 23, 44-45 ("It was now about the sixth hour, and darkness came over the whole land until the ninth hour: the Sun was eclipsed"). Solar eclipses are of course impossible at Full Moon and in any case last for minutes, not hours. Only five early (but major) manuscripts of Luke refer to this solar eclipse, but it may be that a scribe copying an original Luke text, and knowing of an oral tradition of an eclipse at the Crucifixion, wrongly amended the text to refer to a solar eclipse.

At first sight, it might be thought curious that a Crucifixion lunar eclipse is not mentioned in the gospels. Although at the time of the Crucifixion this eclipse would have seemed of great significance, and indeed Peter apparently referred to it about 7 weeks later, and Pilate may have referred to it in his original report to Tiberius, in retrospect this lunar eclipse would have seemed insignificant to the gospel writers compared with the Crucifixion and the Resurrection. The gospel writers were not primarily interested in providing clues for chronologists.

We thank Mr J. G. Griffith for information on some New Testament manuscripts and for detailed discussions, and Dr F. R. Stephenson for lunar eclipse data and some important astronomical references. We also thank the following for their comments on a first draft of this paper: Dr O. R. Barclay, Dr G. A. D. Briggs, Mr O. Edwards, Canon J. Fenton, Dr P. E. Hodgson, Professor H. F. D. Sparks, Dr G. Vermes, Dr D. Wenham and Dr D. E. H. Whiteley.

1. Hoehner, H. W. *Chronological Aspects of the Life of Christ* (Zondervan, Grand Rapids, 1977).
2. Tacitus *Annals* XV, 44.
3. Reicke, B. *The New Testament Era* (Transl. Green, D. E.) (Black, London, 1968).
4. Jeremias, J. *The Eucharistic Words of Jesus* (transl. Perrin, N.) (SCM, London, 1966).
5. Bruce, F. F. *New Testament History* (Pickering & Inglis, London, 1982).
6. Whiteley, D. E. H. *Aufstieg und Niedergang der Römischen Welt* Vol. 25, Pt II (de Gruyter, Berlin, in the press).
7. Jaubert, A. *La Date de la Cène* (Gabalda, Paris, 1957).
8. Schurer, E., Vermes, G. & Millar, F. *The History of the Jewish People in the Age of Jesus Christ* Vol I (Edinburgh University Press, 1973).
9. Fotheringham, J. K. *J. theol. Stud.* 35, 146 (1934).
10. Goldstine, H. H. *New and Full Moons, 100 B.C. to A.D. 1651* (Fortress, Philadelphia, 1973).
11. Fotheringham, J. K. *Mon. Not. R. astr. Soc.* 70, 527 (1910).
12. Maunder, E. W. *J. Br. astr. Ass.* 21, 355 (1911).
13. Kornfeld, G. H. & Lawson, W. R. *J. opt. Soc. Am.* 61, 811 (1971).
14. Ogg, G. *The Chronology of the Public Ministry of Jesus* (Cambridge University Press, 1940).
15. Edwards, O. *Palest. Explor. Q.* 29 (1982).

16. Robinson, J. A. T. *Redating the New Testament* (SCM, London, 1976).
17. Neil, W. *The Acts of the Apostles* (Eerdmans, Grand Rapids, Michigan, 1973).
18. Bruce, F. F. *The Acts of the Apostles* (Inter-Varsity, Leicester, 1952).
19. James, M. R. *The Apocryphal New Testament*, 154 (Clarendon, Oxford, 1953).
20. Ginzel, F. K. *Spezieller Kanon der Sonnen- und Mondfinsternisse* (Mayer & Müller, Berlin, 1899).
21. Pertz, G. H. *Monumenta Germaniae Historica* (Scriptores, Hanover, 1859): Vols 16-19 (reprinted by Kraus Reprint Corporation, New York, 1963).
22. Stephenson, F. R. *Venus Testamentum* 19, 224 (1969).
23. Bruce, F. F. *Commentary on the Book of the Acts* (Eerdmans, Grand Rapids, Michigan, 1981).
24. Oppolzer, T. R. *von Kanon der Finsternisse* (1887) (Transl. Gingerich, O.) (Dover, New York, 1961).
25. Stephenson, F. R. & Clark, D. H. *Applications of Early Astronomical Records* (Oxford University Press, 1978).
26. Stephenson, F. R. *Scienc. Am.* 247 (4), 154 (1982).
27. Chambers, G. F. *The Story of Eclipses* (Hodder & Stoughton, London, 1899).
28. Davis, D. *Sky Telescope* 64, 391 (1981).



## Three Days and Three Nights

When the Pharisees asked Jesus to give them a sign, he told them that no sign would be given to them except the sign of Jonah, who was three days and three nights in the stomach of the great fish. It is because of this statement of Jesus that many students of the Bible believe that Jesus was indeed in the grave for three full days and three full nights.

Yet we have many scriptures which state that He was raised on the third day. It is mathematically impossible for Him to be raised on the third day if he was in the grave for the whole third day. Also, if he was put into the grave just before sundown on Friday and was raised before sunup on Sunday, how do we get three full nights out of parts of two nights?

These problems have faced Bible students for centuries – and they are still being debated. Some feel that we cannot accept a crucifixion date of A.D. 33 because that would have put his death on a Friday, not leaving three full days and nights until his resurrection. So they attempt to find other nearby years that would fit.

If His death was in A.D. 33, it would have placed the 14 of Nisan on Friday, April 3 on the Julian Calendar. There is a document confirming this date in the British Museum in London. It is a letter that Pilate wrote to Caesar two days after the crucifixion. The purpose of the letter was to explain the reason why they had crucified Jesus. Pilate was trying to save his own neck for having put an innocent man to death. Fortunately Pilate dated the letter. It was written on April 5. Unfortunately he did not state the year. However a little computation and common sense will tell us the year. If the year had been A.D. 32, Pilate's letter, dated April 5, would have preceded the crucifixion by eight days. In A.D. 32 the 14th of Nisan fell on Monday, April 13. Therefore a letter written to Caesar on April 5, explaining why he crucified Jesus, would have been absurd, because at that point in time he hadn't killed Him yet. Also, in A.D. 32, the 14th of Nisan was on a Monday, thus he would have been in the grave much longer than three days and three nights if he rose on Sunday. Therefore those who attempt to prove that Jesus was crucified in A.D. 32 find two insurmountable problems: 1) Pilate's letter to Caesar would have been before the crucifixion, and 2) Jesus would have died on a Monday.

However, the year A.D. 33 places the 14 of Nisan on a Friday. But something very special happened on that Friday afternoon. Precisely at the time when Jesus said "It is finished" and breathed out his last breath, the moon began to eclipse. God's timing had been planned from before the foundation of the world. When He set the worlds in motion, He planned for this day and this hour and this minute.

The Gematria of the scriptures gives us ample confirming evidence that Jesus hung on the cross on Friday afternoon, April 3, Julian Calendar. The Gematria also confirms the fact that His death did not begin on the cross – His death began about 9:00 p.m. the previous night in the Garden of Gethsemane.

Jesus was a perfect man. There was no imperfection in Him. The scriptures are clear that the life is in the blood. Jesus' blood was the very essence of His life – and it was perfect. However, in the Garden of Gethsemane, as he was praying to the Father, He sweat great drops of blood which ran down onto the ground. The Greek word used here is *thromboi*, *θρομβοι*. It is where we get our English word thrombosis. It simply means a blood clot. Healthy living blood does not clot. Blood inside our body does not clot unless it is infected or diseased. And when blood flows outside our body, the fibrins in it causes it to clot. The purpose of this is so that when a person receives a wound, he will not bleed to death. However, the clotting process is a dying process. Healthy living blood does not clot. Only as the blood begins to die does it clot.

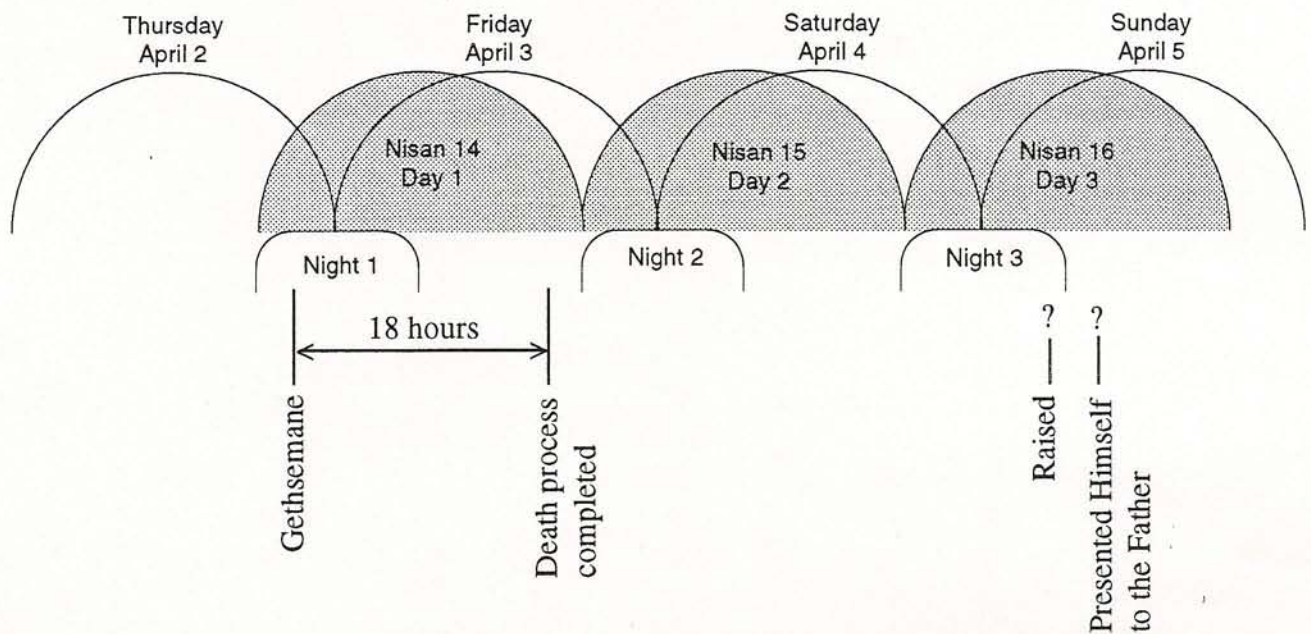
When Jesus sweat great drops of blood that ran down onto the ground, His blood, as it reached the outside of His body, began a dying process. The life is in the blood – and when His blood flowed outside of His body it began to die. The point in time when this began, was the point in time when Jesus began the death process. It was about 9:00 p.m. on Friday, April 3, A.D. 33.

*Jewish reckoning  
the 3rd began at*

*(By our reckoning it would have  
been Thursday evening)*



Immediately after this happened to Him, the soldiers came and arrested Him. During that night they scourged him. This was no light beating. It was a horrible thing to even describe. Scourging was done with a cat-of-nine-tails which had metal hooks on the end of each leather strap. When flailed, the metal hooks would catch and tear the flesh. Scourging often killed a person. It would tear the flesh so bad that sometimes it would even disembowel the person. The scourging that was inflicted on Jesus that night nearly killed him, and he was so weak that by the next morning he was physically unable to carry His cross. Surely he shed much blood that night. Also the crown of thorns would have caused bleeding on his face and head. The shedding of Jesus' blood for us was not just being nailed to the cross – it began the night before in the Garden of Gethsemane and continued until daylight. His dying process began with the shedding of His blood. The three days and three nights would look like this:



Thus it is clearly seen that from the beginning of the death process to the raising and the presentation to the Father was indeed parts of three days and parts of three nights. Hebrew time is always inclusive. Any part of a day is counted as the whole day – any part of a night is counted as a whole night – any part of a year is counted as a whole year.

Now let's look at the amazing Gematria which confirms this analogy. Let's begin with the great drops of blood that he shed in Gethsemane. It is the Greek word *thromboi*. It is used only this once in the entire Bible. It has a Gematria of 301.

The place where they nailed him to the cross was called Calvary. It has a Gematria of 301. Calvary was a very special place. It was part of a hill that had become known as the meeting place between God and man. It was once known as Mount Moriah. It was where Abraham had offered his son Isaac in sacrifice (but a ram was offered in his stead). This hill was, in later years, excavated and divided into two parts. During the years since Abraham offered his son on this hill, it had become the property of King David. David had purchased this hill from a man named Ornan, so that he could there offer sacrifice to God. The name Ornan has a Gematria of 301.

Later, David's son Solomon built the beautiful temple on this hill. The rocky summit became known as "The Foundation" because it was the foundation for the temple. The appellation, "The Foundation" has a Gematria of 301. Sometimes this foundation of the temple was simply called "The Rock." "The Rock" has a Gematria of 301.

When Jesus said "It is finished" and breathed out his last breath, the time was 3:01 in the afternoon. Precisely at 3:01 Greenwich Mean Time that very afternoon the moon began to eclipse. The word for moon in Greek is *selene*, *σηληνη*, and it has a Gematria of 301.

301 = Great drops of blood

301 = Calvary

301 = Ornan

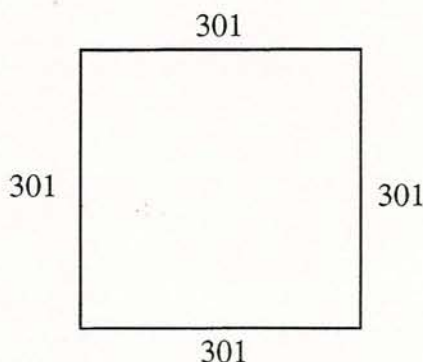
301 = The Foundation

301 = The Rock

301 = Moon

3:01 Jesus died

3:01 Moon began to eclipse



Perimeter 1204

The Holy Mount at Jerusalem = 1204

The shedding of His blood began at about 9:00 p.m. on Nisan 14. At 6:00 a.m. the council could convene to decide what to do with Him. At about 3:00 in the afternoon he died. Thus the death process covered a period of 18 hours. The 1 and the 8 are always numbers that refer to Jesus and the work of creation and salvation. Jesus was the "1" because He was the Beginner; and He was the "8" because He was the New Beginner. He was the *alpha* and the *omega*, which is the first and the last, or the 1 and the 800. Add the sum of the digits and it produces 9. The number 9 means completion and fulfillment.

The 18 hours of His dying process culminated when He said "It is finished." He was the completion and the fulfillment of the means of salvation and redemption.

1117 Meadowbrook Dr.  
Mountain Home, AR 72653  
Bonnie Gaunt  
510 Golf Avenue  
Jackson, Michigan 49203  
(517) 784-3605  
870-425-8871



## In the Heart of the Earth

Jesus said he would be "*in the heart of the earth*" just like Jonah, for three days and three nights. He used the Greek word *kardia*, which means "thoughts" "mind" "feelings" "midst." We feel things by our thoughts and mind when we are in the midst of an experience. This is the meaning of the word.

Jesus was a perfect human being, and could not fully feel the dying process as we do. But when he began the dying process, then he could accurately say he was "*in the heart of the earth*." The terminology here does not have reference to being in the grave -- but rather it means being in the midst of the death condition and being able to experience what dying feels like.

When Jesus was in the Garden of Gethsemane he shed "*great drops of blood*" which rolled down his face and onto the ground. At this point in time the death process had begun in his body. The Greek word used for this is *thromboi*, which means blood clots. Living blood does not clot. Blood only clots when it starts to die. It was also at this point in time, in the Garden of Gethsemane, that God had to withdraw from him, because he was taking the sinner's place. Paul said "*He was made sin for us.*" And God could have no part in the sinner, and so we have the plea of Jesus to "*take this cup from me.*" He was feeling the withdrawal of the Father's approval, and he was feeling the death process working in his body. This happened on Thursday night. From that point in time until he was raised from the dead on Sunday morning, was three days and three nights according to Hebrew terminology.

Jonah 2:1 says "*in the belly of the fish.*" The word "*belly*" here is from the Hebrew word *beten*, which means "*hollow*" "*womb*" "*bosom*" "*heart.*" It really means the inmost place. This is why Jesus said he would be in the "*heart*" of the earth. He did not mean he would be in the grave for three days and three nights, but rather, in the "*heart*" of the earthly dying condition for three days and three nights.

Jonah 2:2, the very next verse, says "*out of the belly of hell cried I.*" But a different Hebrew word is here used for "*belly.*" It is the Hebrew word *meah*, which means "*abdomen*" "*uterus*" "*heart.*" Basically these two Hebrew words mean the same thing, which is the inmost place. But in this verse he implies that he is in hell. This word "*hell*" is translated from the Hebrew word *sheol*. The translators of the KJV took great liberty in substituting the word hell. Sheol literally means the condition of the dead. Jonah was saying that he was in a death condition while in the fish, and certainly he was, had not God spared his life. Jesus was likewise experiencing the death condition from the time when the great drops of blood flowed from his brow. It was at that point in time that the Father had to withdraw from him. So his death condition in the "*heart of the earth*" or the midst of the dying condition that all mankind experience, began on Thursday night. He shed more blood on Friday morning when they flayed him with a cat-of-nine-tails and placed a crown of thorns on his head -- and he shed more blood when they nailed him to the cross -- and it was there that he breathed his last breath. He was laid in the grave on Friday evening, before sundown. It was early Sunday morning when he was raised up out of the death condition. Thus he was literally in the death condition "*in the heart of the earth,*" sharing mankind's experience of death, for three days and three nights (Thursday through Sunday).