

Shroud Coins Dating by Image Extraction

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Abstract

This paper overviews attempts since 1980 to identify possible coin images on the eye area of the Shroud. Special coverage is given to a novel extraction of the images since 2000 by a Pilate Coins expert. The image used was a high resolution color image of the Shroud face. The right eye image shows an augur staff and the letters OY KAI AROC, and the left eye image shows the augur staff and the letters TIBERIOY. Obviously, both coins were issued by Pontius Pilate AD 30-31 and a good coin should have the complete set of letters, TIBERIOY KAICAPOC. The obverse side could have either LIZ (year 17) or LIH(year 18) from the accession of Tiberius which would be equivalent to AD 30/31. It could be argued the coins were minted in AD 30, hence a case made for an AD 30 Crucifixion date, but the coins could as well be of AD 31. Furthermore, if we look for Good Friday on Nisan 15, we find that from AD 29 through 33 only AD 33 calendar can be used, and Nisan 15 falls on Gregorian date April 1, AD 33. Jesus was crucified on Nisan 14, also falling partly on Good Friday. These items are elaborated in the article with supporting documents and extracted color images.

Introduction

Ever since the 1988 C-14 dating of the Shroud resulted in a medieval date, the general public and the media have trumpeted the shroud as a fake. The shroud scholars and ardent believers refused to accept the verdict. Shroud research has given clues to its whereabouts before its first public exposition in Lirey, France in 1357, perhaps going as far back as the second century AD. Pollen studies have confirmed the locations where it is supposed to have resided, Jerusalem, Urfa(Edessa) and Constantinople in Turkey, and in the West. The Man of the Shroud has an unmistakable resemblance to the tortured and crucified Jesus of Nazareth described in the Gospels.

Close examination of the area of the shroud where the radiocarbon samples were taken have been conducted by experts since 2000. The late Dr. Raymond Rogers published his findings in 2005 on the cotton thread in the patched area. Shroud researchers Joseph Marino and Sue Benford gave further credence to the view that the sampled area was from a medieval patch with cotton fibers which blended perfectly with the linen fibers to give any suspicion of a patch. The reader can find details in the published literature.

This article focuses on another line of evidence for the antiquity and first century origin of the Shroud from possible identification of coin images in the eye areas of the Shroud image. After introducing prior research on such identification the author shall present more recent investigations on the coin identification which point to a first century AD origin of the Shroud. I shall be focusing on the Pontius Pilate coins issued during the ministry period of Jesus.

Pontius Pilate Coins AD 29-31

The following information on Pilate coins is from David Hendin's book, 'Guide to Biblical Coins'¹. The three main types are shown below in Figure 1.

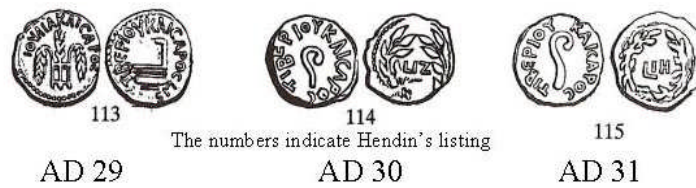


Figure 1. Pontius Pilate coins

Pilate was the procurator of Judea from 26 AD to 36 AD. However the coins he issued belonged to the period AD 29-31 only.

Attempts at Coin Identification, 1980-2000 Period

In 1978 NASA scientists Drs. John P. Jackson and Eric J. Jumper used the VP-8 Analyzer for inspection of a Shroud photograph and observed raised button-like shapes over each eye². The possibility of coins over the eyes was brought up, see Figure 2

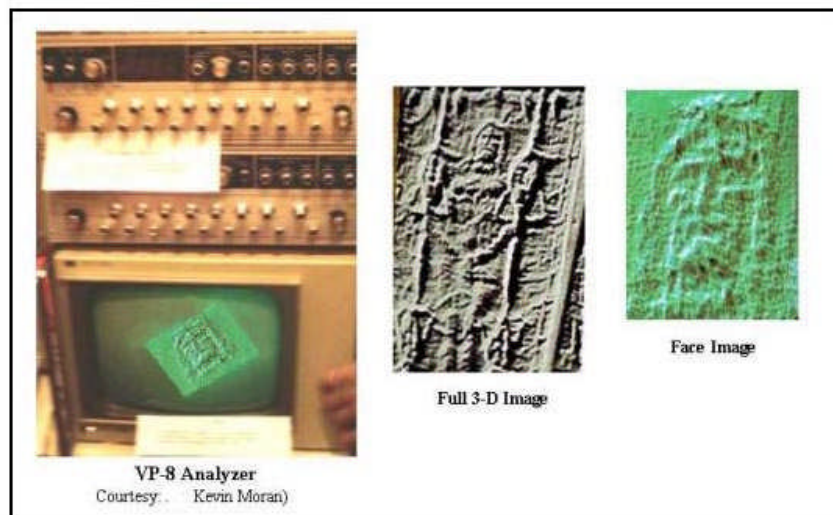


Figure 2. 3-D Image of the Shroud (Front)

In 1980 Father Filas of Loyola University in Chicago and Michael Marx, a coin specialist examined the area over the right eye and detected patterns that appeared to be UCAI (which was considered part of TIBEROU CAICAPOC or Tiberius Caesar)³. They also found a lituus design (augur's staff) at the center. Figure 3 shows the right eye image area and a worn out Pontius Pilate lepton that Fr. Filas acquired that seems to match the fiber image. The Pilate coin of this type was issued in AD 30 and 31. Only the obverse side could prove the year mark (LIZ for AD 30, LIH for AD 31)

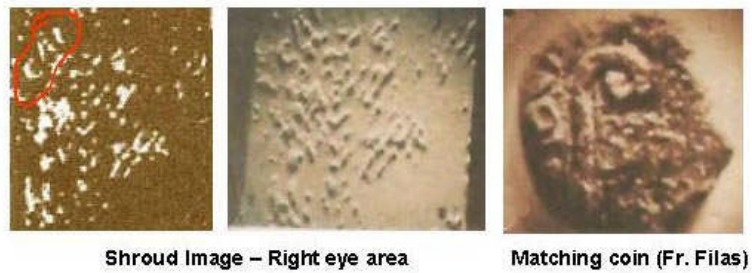


Figure 3. Right eye area image compared to Pilate lepton from Fr. Filas

The above identification was defended by Dr. Alan Whanger and Mary Whanger by their use of Polaroid overlay technique in 1995-98⁴. They observed the eye area image had 74 points of congruence with the Filas lepton. Fr. Filas later on identified another Pilate lepton ('Joulia' lepton) on the left eye area, an AD 29 Pilate coin with a simpulum on the one side and three ears of barley on the other (only one side can be viewed from the Shroud image). The Whangers defended this also by their identification of 73 points of congruence.

In the late 1990s Dr. Mario Moroni in Italy attempted to identify the 'Shroud coins' by digital enhancement of the eye image area. Moroni's identification of the lituus and simpulum coins are shown in Figure 4, taken from the 1998 booklet on the Shroud⁵. The computer enhancement attempts to confirm the presence of the simpulum and lituus coins. The lituus coin supposedly shows the letters Y CAI.

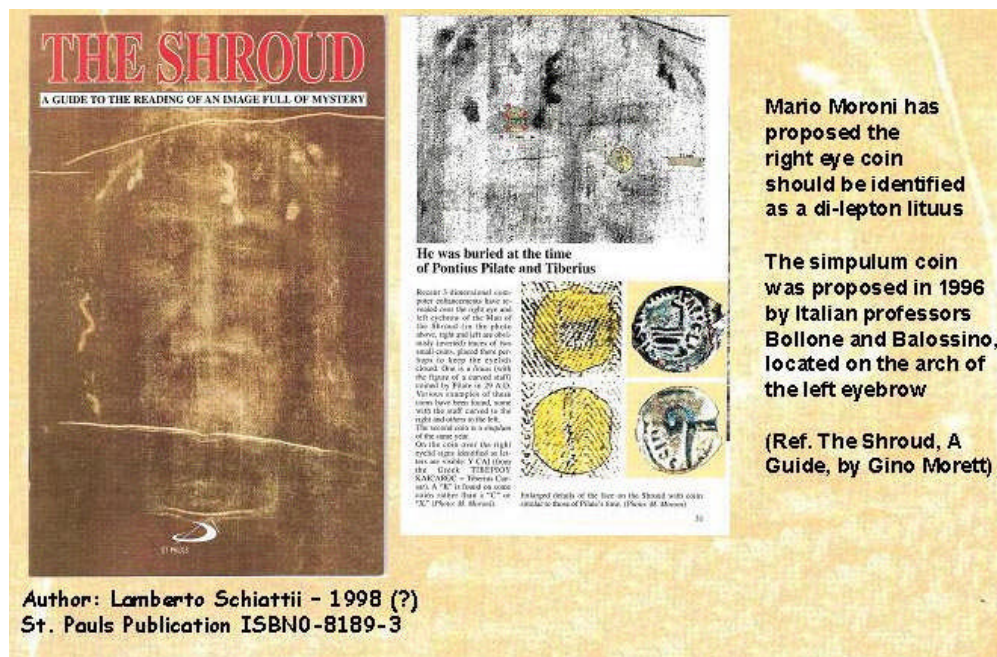


Figure 4. Dr. Moroni's Shroud coins identification

Critique on the Filas and Moroni Coins Identification

According to Pilate coins specialist Jean-Philippe Fontznille the Pilate leptons almost always spell Tiberius Caesar as TIBEROY KAICAPOC using Greek letters⁶. The P is the Greek letter Rho, sounding like R. The C is actually the letter Sigma, sounding like S. The Filas coin shows UCAI which might be a misspelling for UKAI. The U itself is questionable because it should be Y. Furthermore, the Y and the K are separated by a space in regular Pilate coins. Are these deviations genuine or are the result of letters worn out? The CAI part is distinct on the cloth fiber as well as on the computer enhancement. The Moroni identification is even less convincing due to the poor resolution. The

simpulum coin is harder to identify than the lituus coin. The Moroni identification points to the Y CAI letter arrangement (still not the popular Y KAI). The Polaroid

overlay image identification by the Whangers with a significantly high level of congruence is impressive. However, they obtain the same level of high congruence for the left eye coin with simpulum which has not been recognizable by human eye. Finally, there is still controversy over coins over the eye. A lengthy correspondence along this line took place between the Whangers and Antonio Lombatti from Italy regarding the issue of the custom of placing coins on the eye area⁷.

Novel Coin Identification by Jean-Philippe Fontanille

In August 2001 the renowned Pilate coins specialist Jean-Philippe Fontanille in Montreal, Canada published his book, 'The Coins of Pontius Pilate'⁶. He used a high resolution Shroud face picture from a French publication, 'Jesus lans;'Histoire' published by Dossiers D'Archeologie, Dec 99-January 00 issue. The eye areas of the Shroud face were scanned and then a sophisticated image extraction method was used with professional help to identify possible coin images from the right eye and left eye areas. The documents are shown in Figure 5 which also shows the author of the book. A color photo collage of the image extraction can be found on the page opposite to the cover page of the book. Shown in Figure 6 is Fontanille's extraction of the right eye image as a step-by-stem process.

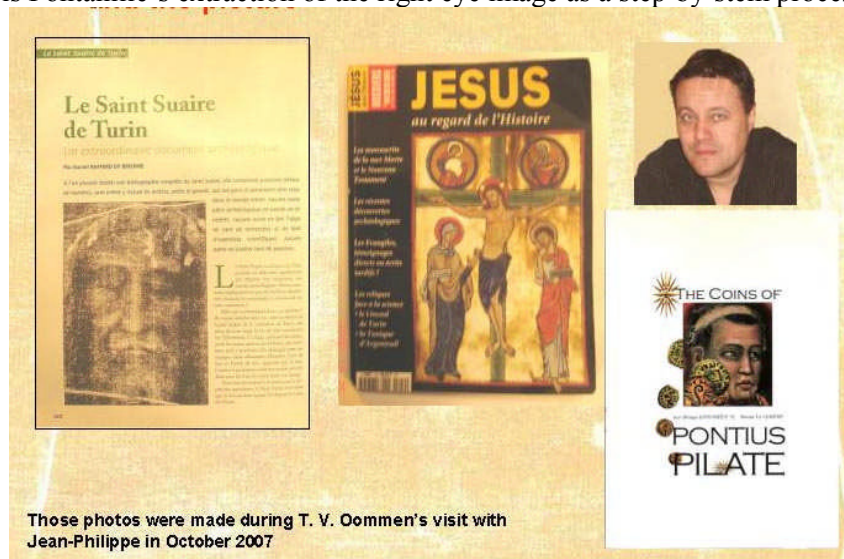


Figure 5. Jean-Philippe and his sources for the Coins image extraction

From the book we read, 'First we took a clear standard strike of a Pilate coin and extracted the engraved image through a digitally uniform sequence of image manipulation, involving color shift, intensity, brightness, and focus. We were able thereby to extract out the high spots on the coin, being the spots most likely to have an image. In a similar way, we took the negative image of the shroud and subjected to a similar digitally uniform sequence of image manipulation. We were to some extent able to factor out the weave of the cloth and

intensify the pattern variation... In this way, our approach to the issue was scientific...In this rather unbiased

approach, we were surprised to see that indeed very distinctive shapes did appear, as we factored out the visual "noise". It is these shapes that we compared to the extracted coin image to draw out our preliminary conclusions." The extraction of the right eye coin image is shown in Figure 6.

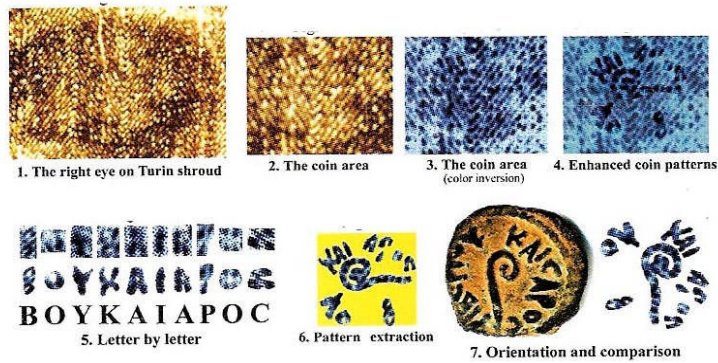


Figure 6. Fontanille's right eye image extraction⁶

Fontanille's left eye image extraction, also shown in the color plate in his book, showed a less convincing image with four Greek letters APOC (from KAISAROC), and nothing else. He assumed this was the simpulum coin, though no image was extracted. Fontanille later on reworked on the image extraction and obtained a well resolved coin image. This was sent to this author for comments. The improved left eye image extraction is shown in Figure 7. This was sent to the author in 2002 but has never been published except in the author's web site.



Figure 7. Fontanille's revised left eye coin identification (2002)

The mechanism of the coin image formation on the cloth is not understood; however, coronal discharges from the raised points on the metal coins causing burnt marks is a possibility.,

Pilate Coins Over Closed Eyes – A Real Look

Figure 8 shows two Pilate coins from the author's collection placed over closed eyes to give a visual

impression. It must be admitted that such perfect placement cannot be expected because of the roundness of the closed eyes, and in reality the coins could slip over to the edges.

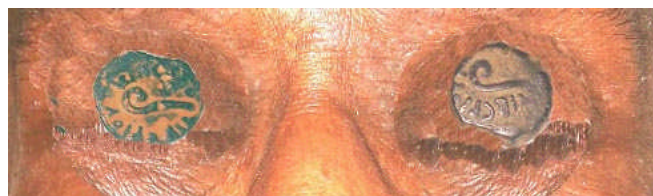


Figure 8. Pilate leptons over closed eyes

Critique on the Fontanille Coin Identification

Fontanille's coin image extraction appears to be more scientific than the methods used by Filas and Moroni. However, we do not have details of the procedure used. Independent verification of the coin image extraction is needed for confidence. Here there is a problem: not all the Shroud images are equally well resolved. Of all the Shroud images, the 1931 Enrie color photograph has the best resolution. It is therefore necessary to use such a high resolution image to start with.

The Fontanille identification shows the coins placed horizontally across the eyes, not vertically as claimed by Filas and Moroni. The regular Greek letters of TIBERIOY KAICAPOC are found, though not all the letters are seen. It is not possible to assign a precise date because these coins were issued in Tiberius' 17th and 18th years (AD 30 and 31), and the date information is on the obverse side. But we can say that the crucifixion date cannot be earlier than AD 30 or 31; it could very well be after that because the coins would be in circulation for a few years.

Can We Determine the Crucifixion Date?

The crucifixion date has been a matter of controversy among biblical scholars. In fact the day of the week the crucifixion took place is also debated. The traditional view is that Jesus was crucified on a Friday and he was resurrected the following Sunday morning. This is supported by several NT statements made by Jesus, Paul and the Gospel writers.

Luke 24:7 "The Son of Man must be delivered into the hands of of sinful man, be crucified and on the third day be raised again"

1 Cor. 15:4 "...that He was buried, and that He was raised on the third day according to the Scriptures"

However, other NT statements seem to support the view that Jesus was in the grave for three full days and nights (72 hours) after the analogy to Jonah's three days and three nights 'residence' inside the big fish.

Matt. 12:40 "For as Jonah was three days and three nights in the belly of a huge fish, so the Son of Man will be three days and three nights in the heart of the earth".

Proponents of this view insist that Jesus was crucified on a Wednesday. In truth, we cannot find a 72 hour period whether we use a Wednesday evening burial. The Wednesday evening burial would make the total time in the grave 84 hours till Sunday dawn. The Wednesday proponents would argue Jesus was resurrected early Saturday night!

The resolution of this issue could be reached by studying the biblical usage of the 'day and night' which is normally 24 hours. However, we can find Old Testament usage of counting even part of a day as a full day. An example would be the fasting of Esther for three full days, but was broken on the third day (Esther 4:16 and 5:1). The Rabbinic sources confirm this.

Using this clue we can reconcile the conflict between 'three days and three nights' and 'third day'. The actual time Jesus was in the grave was close to 36 hours (three 'half days' by our reckoning of day as 24 hour period).

If Jesus was crucified on a Friday, which year and month did it take place? Bible scholars spread the year between AD 30 and 33. Those who choose AD 30 assume Jesus was born some time in BC 5 (assuming Jesus started his ministry after John the Baptist had started his ministry in the 15th year of Tiberius (AD 28). If Jesus' ministry started at age thirty late(AD 28 or in AD 29), AD 30 would not give sufficient time for his ministry.

To arrive at the exact crucifixion date, Dr. Jerome Johnson, author of 'At the Right Time' (Bathkol Books, 1999)⁹ used ancient calendars which he generated using a computer program for the period BC 10 to AD 70. The monthly calendars showed the Roman solar calendar (Gregorian) dates as well as Jewish lunar calendar dates. We know from the Bible that Passover took place on the night of Abib 14. Abib became Nisan after the Babylonian captivity. Jesus was crucified on the Preparation (for Passover) Day according to John 19:31. He died at the 9th hour which is 3 pm (Matt. 27:47). He was buried by sunset at which time Nisan 15 started, the real Passover.

If we examine the calendars from AD 29 through 33 and check for the Roman date on which Nisan 14/15 fell on a Friday, we find the following: AD 29 (Apr 15, Sunday), AD 30 (Apr 4, Thursday),

AD 31(Apr 23, Wednesday), AD 32(April 11, Sunday), AD 33(April 1, Friday). So the only date acceptable is April 1, AD 33 which would be April 3 on the ancient Julian calendar.

Further Examination of the Critical Dates in Jesus' Life

By subtracting 3 ½ years from the crucifixion date we get the end of September, AD 29 as the starting point of Jesus' ministry. If we subtract 33 ½ years from the crucifixion date, the date of birth of Jesus is obtained as the end of September 2 BC. Johnson shows in his book that the exact date can be ascertained from astronomical evidences as September 27, 2 B.C. The 2 BC date can be obtained also from the early Church Father Tertullian's statement that Jesus was born 15 years before the death of Caesar Augustus (August 19, 14 AD). The erroneous 5 BC date was obtained by scholars who assumed the lunar eclipse that preceded Herod's death as recorded by Josephus was in 4 BC. Further investigations have shown that the proper lunar eclipse took place on January 10, 1 BC (Julian date), hence the 2 BC nativity of Christ is entirely believable.

It has been further shown by Martin that the census (registration) that took place at the time of Jesus' birth was not a regular census but a special one in which the people of the Roman empire had to declare their allegiance to Tiberius Caesar who had been elevated to *Pater Patrae* (Father of the Country) in 2 BC⁹. Quirinius, governor of Syria was given the special assignment to enforce the registration (Luke 2:1-2).

An alternate date for Jesus' nativity was proposed by the late Dr. Ernest Martin ('The Star that Astonished the World', ASK Publications, 1991)⁹ as September 11, 3 BC. Both Martin's and Johnson's date of the nativity falls on Tishri 1 for that year which is the Jewish New Year's Day, *Rosh Hashanah*. It is also the Day of the Trumpets. Since it is generally believed the Second Coming of Christ will be on the Day of the Trumpets it is not surprising his First Coming would also be on the same day. Martin's date would stretch Christ's earthly life by another year.

One more date worth mentioning is the day the Magi arrived in Bethlehem. Astronomical calculations show that the Star of Bethlehem (actually Planet Jupiter) stood stationary above Bethlehem on Julian date December 25, 2 BC (Gregorian date December 23)^{8,9}, ironically the date of celebration of Christmas in the western countries. *Epiphany* in the western countries is celebrated on January 6 in remembrance of the Magi's visit. This should be moved back to December 23 which is about two months after Jesus was born.

Conclusion

This paper has examined attempts to identify possible coin images on the eye area of the Turin Shroud. While not conclusive, there is strong evidence for two Pontius Pilate leptons which date AD 29-31 period. This is one more supporting evidence for the first century origin of the shroud. Further confirmation is needed to ascertain the identification. The crucifixion date has been determined from first century calendar evidence to be Friday, April 1, AD 33. This date is 33 ½ years from the nativity of Christ independently determined.

The Author

Dr. T. V. Oommen has worked as a research scientist/engineer for the past 30 years in the electrical industry, though educated as a Chemist (he earned his Ph.D. in 1970 at the University of Washington). Along with his technical career he has pursued biblical studies and research. His website, www.biblediscoveries describes the most amazing Bible mysteries. He and his wife Anna reside in Raleigh, North Carolina. E-mail: tvoommen@bellsouth.net

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