

The Star of Bethlehem

[Home](#)[Advice](#)[Anecdotes](#)[Articles](#)[Astro Photos](#)[The Star of Bethlehem](#)[Extra-Solar System Planets](#)[Auriga The Charioteer](#)[Orion The Hunter](#)[Pegasus, The Winged](#)[Taurus The Bull](#)

THE STAR OF BETHLEHEM: AN ASTRONOMICAL AND HISTORICAL PERSPECTIVE

By Susan S. Carroll

The Star of Bethlehem is one of the most powerful, and enigmatic, symbols of Christianity. Second perhaps only to the Cross of the Crucifixion, the importance of its role in the story of the Nativity of the Christ child is almost on a par with the birth itself. However, the true origin of the Star of Bethlehem has baffled astronomers, historians, and theologians for the past two millennia.

For the purposes of this discussion we shall consider four possibilities:

That the star was a "one-shot" occurrence - never before seen and has not been seen since; it was placed in the sky by God to announce the birth of His Son;

That the Star was added to the story of the Nativity after the fact;

That the Star was a real, documentable astronomical object;

That the entire New Testament was falsified.

If you subscribe to the first theory, then we, as astronomers, have nothing to talk about. It was a supernatural miracle that defies scientific explanation. However, many theologians insist on putting some sort of divine interpretation on the Star as part of the story of the Nativity. By admitting that the Star was a natural phenomenon, with an actual scientific explanation, is tantamount to totally removing its heavy symbolic significance. After all, how could something so miraculous have such a mundane explanation?

There is a certain amount of credence to the second theory. At the time of Jesus' birth, very few people recognized its significance. The only time the Star is mentioned at all is in the Book of Matthew. It is not mentioned in any of the other Gospel accounts of the Nativity. Matthew,

writing some time after Jesus was crucified, may have added the star to the account, because all great kings at that time had stars associated with their nativity. Jesus' significance did not become apparent until after he began his ministry, at the approximate age of 30, the age at which Jews reach spiritual maturity.

As bizarre as the fourth theory may seem at first glance, there is a certain amount of credence to it, also. This theory holds that the entire New Testament was written by members of the Roman ruling family, for the specific purpose of splitting the Jewish people as a political and religious entity. Rome had just fought a third war with the Jews that began in about 60 AD, and although they won the war, they knew full well that Rome could not survive another war with them, unless they could be defeated from within, using a "divide and conquer" strategy. The character of Jesus was said to have been modeled after one Arrius Piso, who is said to have written, among other Books of the New Testament, the Book of Matthew. The rest of the New Testament was written by other members of the Piso family, one of the ruling families of Rome. Although the strategy itself is sound, the evidence to support it is largely circumstantial, and most historians and theologians do not give it much credence.

For our purposes, however, we shall subscribe to the third theory - that the Star of Bethlehem was a genuine astronomical occurrence.

As significant as the Star of Bethlehem is to the mysticism of the Nativity, it is only mentioned once in the Bible, and that is in the Book of Matthew. Luke, whose account of the nativity is far more detailed than that of Matthew, doesn't mention the Star, or the Magi, or wise men, who came from the east, drawn by the Star. He also makes no mention of a fearful Herod, slaughtering all male children in Bethlehem aged two and under, and the Holy Family fleeing to Egypt as a result.

Matthew, on the other hand, makes no mention of a trip to Joseph's ancestral home, Bethlehem or the decree from Caesar Augustus that brought them there. He also doesn't mention a crowded inn, a manger, or angels appearing to the shepherds in the fields. Yet the best information we have regarding the Nativity comes from Matthew and Luke. The Gospel according to Matthew was written between the years 50 - 70 AD; Luke wrote his Gospel between 58 -70 AD. Both agree that Jesus was born, in Bethlehem, during the last years of the reign of Herod the Great, that the birth was announced by a heavenly messenger, and that his actual home town was Nazareth.

The discrepancies in their two accounts are not surprising, when one takes into account the fact that they wrote in an age of oral history and myth, and without the standards of science, history, or journalism that we take for granted today. In fact, it could be said that those standards as regarding certain forms of modern media have not advanced at all. That two people, neither of whom were eyewitnesses, have different recollections of a story that was told to them verbally, should not surprise us in the least; this same thing happens today only too often.

It is generally accepted by most scholars that Christ was born sometime between 7BC and 1 BC. There are a number of historical markers that allow us to pin the date down to this time period. There were also some incredibly spectacular astronomical events that occurred during this period as well. Let us first look at the historical background.

During this period, the Roman Empire was enjoying a time of unparalleled peace and prosperity. Augustus Caesar, the Roman emperor, had begun to recall many of his troops in

outlying provinces starting in 7 BC and release them from duty. In the year 2 BC Rome celebrated its 750th year since it was founded, as determined by the records of the Roman priests - the Romans at that time determined that Rome was built in the year 753 BC. This also coincided with the 25th jubilee year of the reign of Caesar Augustus as Emperor of the Romans.

In August of 2 BC there were great festivals in Rome and throughout the provinces and kingdoms allied with Rome. People came to the festivities from all over the Empire and beyond. Also, in 2 BC, Augustus finally dedicated, after many delays, the new Forum bearing his name. But possibly the most significant event that occurred in 2 BC was that Augustus was given his most prestigious title, the highest honor that could be bestowed on any Roman - that of "Pater Patriae", or "Father of the Country". A decree went out from Augustus that required "the entire Roman people" to register their approval of Augustus receiving this title, before it could be bestowed upon him. This oath took place in the late summer and early fall of 3 BC and was required of all Roman citizens and others of distinguished rank among the client kingdoms associated with Rome. By the year 2 BC, Augustus was seen by the Romans as the "Prince of Peace."

This universal census of allegiance to Augustus was demanded of those who claimed any kind of authority within the Empire. It was also required of any person, most notably the Jewish communities, who could trace their ancestry back to the great Jewish royal families. Jesus' parents, Mary and Joseph, both being descendants of King David, fell into this category. They, among others, were required to swear an oath that neither they, nor any of their offspring would usurp the throne. It was Jewish custom that, during such a census, each travel to the city of their ancestry. In the case of Mary and Joseph, this city was the city of David - Bethlehem.

It was also customary for provincial Romans to periodically have their citizenships affirmed and imperial privileges renewed. The normal thing for Roman provincials was to do this in their native city. However, Romans in outlying provinces of Asia Minor were not always able to do this, so a number of "archive cities" were established throughout Asia Minor where Roman imperial records were deposited. Roman provincials in Asia Minor could then prove their citizenship by reference to these records. If the oath to Caesar Augustus required Roman provincials to travel to these cities, then Luke's statement that "everyone went into his own city" (Luke 2:3) might apply to Roman provincials as well as non-Romans.

Romans were evidently required to renew these privileges every five years. Furthermore, there were official censuses held every 20 years for taxation purposes. The last such census had occurred in 8 BC, making 3 BC exactly five years from the previous Roman census.

At this time, Herod the Great was king of Judaea. He was appointed King by Augustus; he did not inherit the title. Herod was not even a Jew; he was Idumaean by birth, and a commoner at that, and yet, as King of Judaea, was the ruler of a large segment of the Jewish population. This made him immensely unpopular among the Jewish people. Furthermore, his father, Antipater, Rome's representative in Judaea, had paved the way for the overthrow of the Hasmoneans, the Jewish royal family in power who were very popular. This didn't go over too well, either. To appease the Jews, Herod took, as his second wife, Mariamne, a member of the Hasmonean family. This had little effect; Herod was universally despised by the Jews, and he knew it. This, among other things, made him paranoid and delusional. During his reign, Antipater, his eldest son by his first wife, Doris, convinced Herod that the two young royal sons, born to Mariamne, were plotting against their father. Herod immediately had them executed. Later, he had Mariamne and her mother executed as well. These executions infuriated the

Jewish people. Ironically, just before his death, Herod had Antipater himself executed - for allegedly attempting to assassinate his father by poisoning him, and then attempting a military coup.

Now let's take a look at the astronomical events that corresponded to this period in history. There were probably as many or more people, percentage-wise, interested in astronomical occurrences and their interpretations at this period of history than at any other time in western civilization. Astrological matters at this time in history were believed by most people to be reliable scientific indicators of present and future events, especially those involving rulers of the various countries. The notable exception to this were the Jews. To them, Gentile forms of astrology were blasphemy; they did not believe that the stars should be used to predict the future. However, they did believe that the stars were signs of God's works; there are several indications in the Old Testament, starting with Genesis 1:14, that God placed the stars in the sky as signs, to make known His wishes and actions.

During this period of history, there was no clear distinction between astronomy and astrology. The motions of the stars and planets were charted, and this information used to determine the events of history, and the fate of people's lives, most notably that of royal families. Of the various groups of priests and astrologers/astronomers of this period, the group that garnered the most respect were the Magi. The word "Magi" is plural for "magus", which is the root of the word "magic" in the English language. The mysticism surrounding the Magi and their profession would possibly have been seen as magic by the people of the time; many of the races that inhabited what was then considered to be the civilized world, including the Jews, were very superstitious by nature.

The origins of the Magi are not entirely clear, but they are believed to have had their beginnings with the teachings of Zoroaster, sometime around 1000 BC. Zoroaster was a religious leader and teacher in the region of Persia where the Magi were thought to have their origins. Zoroaster espoused monotheism, and taught that at sometime in the future, there would arise a king who would raise the dead and transform the world into a kingdom of peace and security. Interestingly enough, the Zoroastrian traditions associated with this prophesied king said that the king would come forth from the descendants of Abraham.

The Magi were not simple astrologers; they were professional astronomers as well. Over the centuries they became important members of royal courts, often serving as emissaries to the kings by whom they were employed. The secrets of their teachings were reserved for other members of their profession and royalty. The Magi, particularly those from the eastern parts of what was then considered to be the civilized world, were held in high esteem.

In 7 BC there was a triple conjunction of Jupiter and Saturn. All three meetings of the two planets occurred in the constellation Pisces, long associated with the Hebrew nation, a phenomenon that occurs only once every approximately 900 years. The first conjunction occurred in late May, the second in September, and the third in early December. Although the two planets never came closer together than about two diameters of the moon, and therefore could hardly have been seen as a single star, these events would have had great significance to the trained astronomers of the time. Jupiter was known as the "planet of Kings" and Saturn as the "Protector of the Jews". This could easily have been interpreted as a sign that the Jewish Messiah had been, or was about to be, born.

In February of 6 BC a massing of three planets occurred, again in the constellation Pisces, when Jupiter, Mars and Saturn came within 8 degrees of each other. This event occurs only

once every 800 years, approximately, and again, would have had great significance to the astronomers of the time. Both of these rare events would have been predicted by the ancient astronomers.

Chinese astronomers recorded a nova in the constellation Capricorn that was visible during March-April of 5 BC. It was visible for over 70 days. But Matthew indicates that the star moved from the eastern sky to the south. A nova in Capricorn, some 40 degrees off the ecliptic, would not have moved much at all, with respect to Earth; it would have remained in the same place with respect to the celestial background.

Chinese astronomers also recorded two comets - one in 5 BC and one in 4 BC. The comet of 5 BC had an observable tail; the comet the following year did not. Although the Chinese thought of comets as "broom stars" - sweeping away the old and bringing in the new, and thus, looked upon them with favor, many astronomers, as well as the general populace, in Persia and the Roman empire did not share this view. Comets were felt to be harbingers of disaster; it is therefore highly unlikely that a comet could have been the star that announced the birth of the Jewish Messiah, or that inspired the Magi to make the long journey to Bethlehem. Furthermore, Matthew's account clearly described a star; it is highly unlikely that he would have mistaken a comet for a star.

However, these astronomical events, exciting as they were, pale by comparison to the events of an 18 month period during 3-2 BC. This was one of the most remarkable periods in terms of celestial events in the last 3000 years. These celestial events no doubt inspired many wonderful and mystical interpretations, by the priests and religious peoples of those times. And coincidentally, they occurred when the entire Roman empire was in celebration. It was as though the heavens were confirming the greatness of the sovereignty of the Roman Empire in general, and Caesar Augustus in particular.

On May 19, 3 BC, the planets Saturn and Mercury were in close conjunction - within 40' (minutes of arc) of each other. Then Saturn moved eastward through the stars to meet with Venus on June 12, 3BC. During this conjunction the two were only 7.2' apart. And if this weren't enough, on August 12, 3 BC, Jupiter and Venus came into close conjunction just before sunrise, coming within 4.2' from each other as viewed from earth, and appearing as a very bright morning star. This conjunction took place in the constellation Cancer, the "end" sign of the Zodiac. Ten months later, on June 17 2BC, Venus and Jupiter joined again, this time in the constellation Leo. The two planets were at best 6" (arc seconds) apart; some calculations indicate that they actually overlapped each other. This conjunction occurred during the evening and would have appeared as one very bright star. Even if they were 6" apart, it would have required the sharpest of eyes to split the two, because of their brightness.

The constellation Leo was not only considered the "head" or "chief" sign of the Zodiac, it was thought to be ruled by the sun, the "chief" star of the heavens. It was considered the "Royal Constellation", dominated by the star Regulus. The name Regulus itself is derived from the Latin word for king; it was considered the "King Star". Leo was also considered the beginning zodiacal sign for the astrological year and was thought to denote royalty and power for any of the planets found within it. Jupiter was regarded by the Roman people to be the guardian and ruler of the Roman Empire and it was thought to have the power to determine the course of all human affairs. Venus, now in conjunction with Jupiter, was believed to be the mother of the family of Augustus. So here were the two planets dedicated to the origins of Rome and the sovereignty of Augustus merging together in a "marriage" during one of the most glorious years in the history of Rome, and in the constellation of Leo, at that.

That this conjunction also occurred during a full moon was also important to the Romans. Full moon day was especially sacred to Jupiter, and the day itself was called “the Trust of Jupiter”. It was celebrated as a time when faith and trust were supposed to be given to the guardian and ruler of the Empire of Rome, whether human or divine (and in the case of Augustus, there was little distinction).

Another rare astronomical event occurred 72 days after the conjunction of Jupiter and Venus, on August 27, 2 BC. This was a close grouping, or massing, of the planets Jupiter, Mars, Venus, and Mercury. It also occurred in the constellation Leo, and during the month of August when most of the Roman festivities for that unusual year were taking place. This was seen by astrologers as “common agreement of purpose”. It probably also signaled a new and powerful beginning for Rome and the rest of the known civilized world.

Just 33 days after the Jupiter/Venus “morning star” conjunction, on August 12, 3 BC, Jupiter came to within 19.8’ of Regulus. Regulus, the chief star in Leo, lay practically in the path of the Sun, and was therefore afforded the additional epithet of “Royal Star”. Here was the “King planet” now coming into contact with the “King Star”. AND in the Royal Constellation. If viewed in isolation to other astronomical occurrences this single event might not have been significant to astrologers, but combined with the other celestial displays of 3 to 2 BC, it soon took on increased symbolic meaning. This is because the first conjunction began a series of three meetings of Jupiter and Regulus that occurred in a precise sequential pattern. Jupiter first united with Regulus and then continued on its normal journey through the heavens. On December 1, 3 BC, Jupiter stopped its motion through the fixed stars and began its annual “retrograde” motion. In doing so, it once again headed toward Regulus. Then on February 17, 2 BC, the two were reunited, 51’ apart. Jupiter continued its retrograde motion another 40 days and then it reverted to its normal motion through the stars. Remarkably, this movement once again placed Jupiter into a third conjunction with Regulus on May 8, 2 BC. They were then 43.2’ apart.

To astrologers, it appeared as though the King Planet was circling over and around Regulus, the King Star, “homing in” on it and pointing out the significance of the King Star as it related to the King Planet. This circular movement of Jupiter over Regulus would, in all probability, have signaled that a great king was then destined to appear. This circling motion also provided another significant astrological observation. The zero line for beginning and ending the 360 degrees of the Zodiac was determined by some astrologers as existing between Cancer and Leo. This means that this motion effect of Jupiter circling around Regulus was happening in the heavens just east of the zero degree line for astrological measurements. It occurred at the beginning section of the astrological Zodiac in the view of some Gentile astrologers. This interpretation is similar to that designed by Moses; the Biblical Zodiac designed by Moses also began with the royal sign of Leo, but its zero degree line was located in the middle of the constellation, not at its beginning. Whatever the case, these indications would unquestionably have shown the people of that era that a great king or ruler was then being introduced, to the people of the world.

And who was the greatest ruler then in existence? Caesar Augustus. These celestial events coincided with the 25th year of Augustus’ elevation to supreme power over the Romans, the 750th priestly anniversary of the founding of Rome, and the exact year the people and Senate of Rome bestowed upon Augustus his supreme title of Pater Patriae. To those in Rome, it seemed as though heaven itself was giving approval for the emperorship of Augustus and that the government of Rome had the divine right to world sovereignty. Hardly a person in Rome

would have disputed this interpretation and most people would have agreed that the astronomical evidence in support of this interpretation was overwhelming.

In other parts of the world, however, these astonishing celestial events were interpreted in a different way. For example, the Magi from the eastern world were also watching these celestial phenomena denoting the advent of royalty. These Magi decided to skip Rome and its festivities; instead they headed toward Jerusalem, and Judaea, looking for this special child whom they considered to be the important newborn "King of the Jews". Some scholars assert that the Star was only visible to the Magi; this is misleading, if not totally false. The stars and planets were there for all to see; but it took the training of the Magi to understand the significance of their positions. And as I've already stated, theirs was not the only interpretation of the celestial pageantry of 3-2 BC.

What brought the Magi to Judaea? A prophesy made by Daniel, writing between 605 and 530 BC, which stated that Jerusalem would be rebuilt after the Babylonians destroyed it in the 6th century BC, and that 490 years would pass from a command to rebuild Jerusalem until a world-embracing messianic kingdom would emerge on the earth in the region of Palestine. Although vague references to a Jewish Messiah had been made by earlier prophets, Daniel was the first to specifically predict the birth of this Messiah. However, Daniel's prophecy had some pretty vague factors associated with it. For instance, Daniel did not clearly explain which command to rebuild Jerusalem was meant. He also did not say whether his year-lengths were lunar or solar. As regards the Messiah, Daniel did not indicate at what point in the life of the Messiah the 490 years began their countdown. Thus, the prophecy does not provide, with pinpoint accuracy, when the Messiah would make His presence known. Significant events in a Jewish male's life could include his bar mitzvah, when he achieved 20 years of age and thus able to go to war, or when he became thirty, the year of spiritual adulthood. The 490 year period could also have begun whenever the Messiah would be proclaimed King, which could happen at any time during his life.

Because Daniel did not detail these points, the prophecy was vague to Jews and others at the time. It was subject to a variety of questions, not to mention interpretations. Most Jews, however, were certain enough about the prophecy to believe that it would occur somewhere near the first century. Flavius Josephus, born Joseph ben Matthias, the Jewish historian who lived in the last part of the first century, mentioned a conviction among the Jews that this prophecy of Daniel would have its fulfillment within the first century. Josephus further stated that it was shown in the "sacred writings" that about that time one from their country (Judaea) should become governor of the habitable earth. Daniel was a Jewish slave, who as a young boy, was captured by Babylonian soldiers and taken to Babylon, where he served the Babylonian kings. He became a Master Magi, in a sense, and was highly prized by the Babylonian king Nebuchadnezzar, because of his uncanny ability to accurately interpret dreams and predict historical events based on these dreams. His reputation was known throughout the then western civilized world.

The Magi were well aware of Daniel's prophecies, since he was one of them. Furthermore the constellation Leo the Lion had great significance to the Jewish people. It was referred to as the Lion of Judah, after the tribe of Judah. To the Magi, the astronomical events fit the prophecy concerning the birth of a great king born of the Jews far more closely than they did the sovereignty of the Roman Empire and Augustus.

Even the Romans were aware of the prophecies of Daniel. Roman historians in the early second century wrote of the firm belief that had long prevailed through the east that it was

destined for the empire of the world at that time to be given to someone who would come forth from Judaea. Even the Roman emperor Nero was advised to move his seat of empire from Rome to Jerusalem, because that city was then destined to become the capital of the world. Nero, of course, declined. However, in 2 BC, the Romans already had the fulfillment of the prophecy staring at them in the face, in the form of Caesar Augustus. They didn't feel the need to look elsewhere for interpretations.

All these widespread beliefs were based on the prophecies of Daniel. Since Jewish people lived in all areas of the Roman and Parthian worlds, their national aspirations would have been well known. These early prophetic convictions of the Jews, Romans, and Magi, were important to those who lived in the first century BC. And the use of astrological interpretations in evaluating the historical events of the time were at an all time high. So, when the Magi, who were professional astrologers, saw what they considered to be the "Star" of a Jewish king, it was a certain sign to them to go to Jerusalem with gifts to present to that newborn king.

Most Jews admired the Magi of the east. This was not only because of their former association with the prophet Daniel, but also because they were not idolaters. Though the Magi believed that the power of the deity was manifested in the natural elements of fire, water, air and earth, these Gentile priests did not set up material images in recognition of him.

So when the Magi arrived in Jerusalem and made their presence known, Herod was justifiably alarmed. His own court astrologers had no doubt given Herod their own interpretation of the celestial events of the previous months, but Herod, knowing full well the reputation of the Magi, and the esteem in which they were held by the Jews, decided that he needed more information. Furthermore, to refuse an audience with these Magi, who represented eastern royalty, would have been decidedly politically incorrect, not to mention extremely bad manners. The Sanhedrin, the Supreme Court of the Jews, was evidently also anxious to hear what the Magi had to say.

How many Magi, or their point of origin, is unclear. But one thing is certain; they traveled with a great deal of pomp and circumstance. Furthermore, persons of their stature would not have traveled by camel; they would have made the journey on horseback. So with all due respect to Hallmark - the three kings on camels depicted on most Christmas cards has no basis in fact. The legend of the "three kings" arose, no doubt, because of the three different gifts presented to the newborn king; gold, frankincense, and myrrh. Three gifts, three kings; the explanation is probably as simple as that.

Why, if the Magi were well aware of the prophecy concerning the birth of the King of the Jews, did they stop at Jerusalem and ask Herod for directions? For one thing, as emissaries of royalty, they were bound, by their own code, to pay their respects to royalty in cities they passed through. Also, although they knew that the child was to be born in Judaea, in the city of David, they evidently did not know exactly where Bethlehem was. Bethlehem was about 6 miles south of Jerusalem; once the Magi obtained this information, they were on their way, bearing gifts of gold, frankincense and myrrh, the traditional gifts for newborn royalty.

When the Magi arrived in Bethlehem, Jesus was not an infant; he was a toddler. Mary and Joseph were by this time living in a house, not a stable. Matthew, in Chapter 2, Verse 11 of his Gospel states: "And when they were come into the house, they saw the young child with Mary his mother, and fell down, and worshipped him: and when they had opened their treasures, they presented unto him gifts; gold, and frankincense, and myrrh." Depending on their point of origin, the journey would have taken them anywhere from two to four months or more, with a

stopover in Jerusalem. This would have put their arrival in Bethlehem somewhere between early September and late December of 2 BC. Furthermore, they may not have all started from the same place; they could have stopped along the way and picked up, or consulted with, more of their colleagues. Several places have been proposed for their point of origin, including Babylon, Persia, or Sheba, in Arabia. Although there is some reference in the Old Testament of the Magi coming from Arabia, this is by no means certain and it is highly possible that they did not all come from the same country. There are also historical references to an incident that occurred in 614 AD, when Persian armies invaded the Holy Land, destroying Christian churches. However, when they came to the Basilica in Bethlehem they refused to destroy it because of a mosaic depicting the adoration of the Magi. It turns out they recognized them because of their dress; they were fellow Persians.

Through the years there has been some misunderstanding about the star due to a mistranslation of Matthew in the King James version of the Bible. The King James version has the Magi saying "we have seen his star in the east". A more accurate translation is "we have seen his star at its rising". Most of their daily observations took place in the early morning hours, during which they would have seen the Jupiter/Venus conjunction of August, 3 BC. They then searched for further signs, and found them, in the triple conjunction of Jupiter with Regulus. Then, on June 17, 2 BC, Jupiter again joined with Venus, this time in the early evening. This conjunction, in all probability, was what brought the Magi to Jerusalem. The Magi, observing this conjunction from Mesopotamia, would have seen this conjunction on the western horizon, precisely in the direction of Judaea.

But the conjunction would have only been visible for a short time, before setting in the western horizon. Yet Matthew's account of the star has the Magi following it westward, until it stopped at the place where the child was born.

Now let's take another look at the astronomical events of the 18 month period in 3-2 BC again. What is the one thing they all have in common, with the exception of the Saturn/Mercury conjunction? The planet Jupiter.

After leaving its massing with Mars, Saturn, and Venus on August 27, 2 BC Jupiter continued its apparent motion westward each morning, as viewed by the Magi at their regular pre-dawn observations. This westward motion would have led them to Jerusalem. Jupiter then, due to retrograde motion, appeared to "stop" in the sky, as viewed from Jerusalem, directly to the south, over Bethlehem. It came to its normal stationary position at dawn on December 25th, 2 BC. Not only that, but the planet came to a stop in the constellation Virgo. It remained there for nearly six days. Furthermore, being near the Winter Solstice, the sun was also "standing still".

So when was Christ born? We know from Biblical references that Christ was born six months after his cousin John the Baptist. Again from Biblical references we can pin down the date of John's birth. John's father, Zachariah, was in the temple performing his priestly duties when an angel visited him in a vision and informed him that his wife Elizabeth, who was barren and on in years, would soon conceive a son. We know from Luke that Zachariah was responsible for the eighth of the 24 Priestly Courses of the Jewish Faith. Each of the 24 courses lasted a week and were repeated twice during the year. The Jews used a luni-solar calendar of 51 weeks - the other three weeks of the year were for the three major Jewish religious celebrations - Passover, Pentecost and Tabernacles. Because the calendar only had 51 weeks, the Jews had to add 30 days at prescribed intervals so that the calendar kept pace with the solar year.

In the case of Zachariah, he was officiating in the 8th course, or 8th week of the Jewish year,

when the angel paid him a visit. The priestly courses probably started their serving in the springtime month of Nisan - the first month of the Jewish ecclesiastical year. This is a chronological clue - it tells us the general time of year that Zachariah was serving. We also know that he was not serving at a festival period because the priests suspended their normal weekly duties and all served together during the major Jewish high holy seasons.

Assuming that the springtime month of Nisan began that year (it varied with the state of the crops - in 4 BC it began after midnight on March 28 - March 29) on what corresponds to the end of March of our current calendar, then Zacharias was visited by the angel, and his wife became pregnant, in the month of June. Remember also that Passover, one of the High Holy weeks of the Jews, occurred during the time interval from late March to June - putting off Zacharias' priestly course for one week. Assuming a full-term pregnancy of 9 months, Elizabeth gave birth to John sometime in March. This means Jesus' birth would have taken place the following September.

But in which year? And what if Zacharias was serving his priestly course during his second time of the year, in December? This would mean that Elizabeth gave birth to John in September, and Jesus was born the following March. In fact, many modern historians and theologians readily accept a spring date for the birth of Christ because of the passage in Luke regarding the angel who appeared to shepherds guarding their flocks in the field. Several of these historians assert that the only time shepherds were in the fields with the flocks was spring, which was lambing season. The lambs were an important part of the feast of the Passover. However, flocks of sheep were habitually kept in the fields, from early March until late October, and sometimes all year round. It does not seem reasonable that the shepherds would leave them unattended at all, as important as they were to Passover, where they would be subject to predators and theft. In other words, the sheep provide us with no real clue as to the time of the Nativity.

Again let us go back to the census of Caesar Augustus - the oath required of all people in the Roman empire and client kingdoms, which began in the late summer or early autumn of 3 BC. If this was indeed the census that brought Joseph and Mary to Bethlehem, and it seems quite probable that it was, then Jesus had to have been born sometime around this period. We know from the Biblical stories of the Nativity that Mary was "great with child" - in other words, close to full-term. We know that once Joseph and Mary arrived at their destination, Bethlehem, she went into labor and delivered. This makes September of 3 BC the most likely month of Jesus' birth, with John being born in March of 3 BC. We know also that Jesus' birth had to occur before September 26 of that year, because the High Holy week of Tabernacles was from September 26 to October 3 in 3 BC; this required Jews to be in Jerusalem to celebrate this holy festival. Yet Mary and Joseph were in Bethlehem when Jesus was born.

The Romans would not have selected the three primary festival seasons for a census when most of the Jews in Palestine were required to be in Jerusalem. Luke tells us that the city of Bethlehem was crowded because of the census - NOT because people were crowding toward Jerusalem for ceremonial purposes.

There are other historical markers that point to the year 3 BC as the year of Jesus' birth. Luke's narrative states that Jesus began his ministry in the 15th year of Tiberius' reign as Emperor of Rome, when Jesus was about 30. Unfortunately Luke does not tell us if he used the Roman method of reckoning Tiberius' 15th year, or that which people in Judaea and Syria were accustomed to, which antedated the reign of kings and emperors to Tishri One (the Jewish New Year's Day) of the previous year. However, Ernest Martin believes that it is more likely

that Luke was using the Eastern method of reckoning Tiberius' reign, because he was writing his gospel to the Greeks and Romans, to Gentiles in general, and to one Christian convert, Theophilus, in particular. This method of reckoning would put the whole year in which Tiberius became emperor of Rome on August 19, 14 AD as his first year of rule. This means that New Year's day for the beginning of that year begins the first year of Tiberius. Hence, the whole year from Tishri One, 13 AD to Tishri One, 14 AD would have been the first year of Tiberius. Consequently, Tiberius 15th year would have been from Tishri One in 27 AD to Tishri One in 28 AD. This would put Jesus' birth somewhere in 3 BC, given that he was "about thirty" when he began his ministry. This also fits nicely with the Jewish belief that spiritual maturity did not begin until the age of thirty.

Many scholars have limited their time frame of Jesus' birth to the period before 4 BC, as most of them accept the fact that Herod the Great died in 4 BC. We know a great deal about Herod's death, from the works of Flavius Josephus, who stated that Herod died after a lunar eclipse and was buried before Passover. There were lunar eclipses in March 23 of 5 BC (total), March 13 of 4 BC (partial) and January 10 of 1 BC (total). There was also an eclipse on September 15, 5 BC, but this eclipse has been ruled out for a variety of reasons. Herod was in Jericho when the rabbis were executed - Jericho was where his winter palace was located. Because of his ill health, he was advised by his physicians to return to Jericho from Jerusalem, because the climate was better for his health. He would not have been in Jericho in September, because the heat at that time of year would have been unbearable. He was critically ill at the time, and would hardly have subjected himself to the late summer heat of Jericho in his condition.

The day of the eclipse, after the executions, it was said that the moon that night was red with the blood of the murdered rabbis. The eclipse of March 13 of 4 BC was only a partial - 40% at that. This would not have turned the moon red. Furthermore, there was not enough time between this eclipse, and the final burial of Herod's body at the Herodian, once all the customs, and mourning periods required at the time, to take place. The March 23, 5 BC eclipse suffers from the same problems.

The problem is that Josephus wrote that the eclipse of 4 BC was the eclipse with which Herod's death was associated. This is why most scholars have asserted that Herod died in 4 BC. However, it must be remembered that there were no Xerox machines in the first century AD. Manuscripts were copied painstakingly by hand and errors were made. In this case, Josephus, writing some 100 years after the birth of Christ, may have made the error himself, but this is unlikely. Copies of Josephus' writings prior to 1552 list 1 BC as the year of Herod's death. It is more likely that in subsequent years, some poor scribe, toiling by candlelight in the late hours simply copied the date incorrectly. Those proponents of the March, 4 BC eclipse claim that, because the elaborate funeral preparations took so much time, that the Passover Josephus refers to is the Passover in the year following Herod's death. This reasoning has a number of flaws. It was recorded, by Josephus, that Archelaus, Herod's son and successor, was able to accomplish several matters of state before Passover began. Archelaus would hardly have waited an entire year to assume the throne; in fact, Josephus reports that the new king went to Rome as soon as Passover was ended in order to confirm his kingship with the Roman Emperor. Josephus reports that both the public and private mourning periods had been carried out before Archelaus began making state decisions. Furthermore, it was customary at the time of a king's death for the king's royal treasury to be returned to Rome. Caesar's financial officer for Syrian affairs, one Sabinus, met Archelaus at the port city of Caesarea in order to secure the treasure of the dead king. It is hard to believe that Sabinus

would have waited 13 months to take charge of Herod's treasury, which in essence belonged to Rome.

Josephus wrote about the circumstances surrounding Herod's funeral in great detail. Herod had left explicit instructions regarding his funeral; it was to be the grandest funeral in all of human history. To make sure that the Jewish people would also be in mourning, Herod had first invited, then imprisoned, many prominent Jewish elders. Messengers were sent out from Jericho to all parts of Herod's realm, bearing orders that all the elders of the cities and villages come to Jericho on pain of death. Since the northern cities of Herod's kingdom were some 130 miles away, it would have taken at least a week from the day the order was issued to get them all to Jericho. Once they were there, they were locked up in the hippodrome. Herod gave further orders that they were all to be put to death the day Herod died. This would ensure that the entire Jewish community would be in mourning, albeit not for Herod. Fortunately, this monstrous plan was never carried out; Herod's successors immediately released the elders after Herod's death.

There were only 29 days between the eclipse of March 13, 4 BC and Passover - and the public mourning period alone was 30 days. Furthermore, custom required the body to be borne to its final resting place on the shoulders of family members, on foot. And as was Jewish custom, the mourners were unshod. Members of the royal family were hardly used to bearing heavy burdens over rough roads in bare feet. The burial site, the Herodian, was some 25 miles from Jericho. The procession went in "stages", much like the Roman armies traveled. This meant that in all likelihood, the distance the funeral cortege could have traveled was approximately 1 mile per day, with stopovers in each town so that the body could lay in state for a period of time in each one of them, enabling the local townspeople to pay their respects.

Another reason for the slow rate of travel was to keep the body intact; it was embalmed with honey, as was the custom of the time. This anointing of the body with honey took place once per day to prevent putrefaction. One can only imagine the hordes of flies that accompanied the funeral cortege (no doubt paying their final respects), to say nothing of the odor of decaying flesh. If the bier were mounted on a carriage and drawn by horseback over the rough road, the body would have fallen to pieces en route. Also, a suitable military escort for the funeral cortege had to be assembled; Herod was hated by the Jews and there was a high risk of desecration of the body on the trip to the Herodian. Archelaus, his successor, was also at high risk of assassination. When one adds on the tasks of organizing the procession (it took some 500 domestics to carry spices that were also used in the preservation process), and the time it took to secure the royal treasury from Jerusalem for its role in the burial rites, this whole process was more likely to have taken 8-10 weeks, not 29 days. The only eclipse that fits this timeline is that of January 10, of 1 BC. This leaves us free to look at the years 3 and 2 BC, instead of limiting our search to the years prior to 4 BC.

In conclusion, it was the first Jupiter/Venus conjunction of August 12, 3 BC in the constellation Cancer that alerted the Magi to look for further signs. They found them - in the triple conjunction of Jupiter in Regulus in the constellation Leo. But it was the second conjunction, on June 17, 2 BC, in the evening, of Jupiter and Venus, in the constellation Leo, that started the Magi on their way west. Although the Magi probably had predicted these celestial events in advance, they wanted confirmation that their predictions would come to pass. The "star" they followed was the planet Jupiter, the King Planet, which, having gone through its retrograde motion, appeared to stand still on precisely December 25, 2 BC in the southern sky - and from Jerusalem it would appear that Jupiter had come to rest directly over Bethlehem. It remained

stationary for 6 days, and to add to the symbolic significance, it was stationary in the center, or perhaps “womb”, of the constellation Virgo.

This explanation is elegant in its simplicity, but often the simplest answers are the correct ones. This scenario, first presented by Dr. Ernest Martin, is the only one that fits the facts that we have at our disposal and I believe it to be by far the most plausible to date. But it requires us to go back in time, and attempt to understand the prevailing concepts of astronomy/astrology of 2000 years ago. For many astronomers today, this is a difficult task. Yet there is something compelling about the story of the Star that urges us, as amateur astronomers, to attempt to unravel the mystery surrounding it. Whatever the Star of Bethlehem was, it has had more impact on humankind than any star before or since.

It is also possible that the mystery of the Star will never be completely solved. But for many of us, it is the mystery itself that drives us to find the solution.

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