

STAR OF BETHLEHEM

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ABSTRACT

For over 400 years scholars and theologians have studied the possible origins of the Star of Bethlehem.

In preparing for this essay, it was quickly discovered that the articles and publications regarding the origin of the Star of Bethlehem numbered in the hundreds. Due to limited space and time, this critical review of possible interpretations of the Star will focus on only three areas: (1) *the accuracy of dates of the event*, (2) *the possible astronomical origins (stellar and non-stellar)*, and (3) *popular misconceptions*. I will draw upon three publications and give my opinion.

1. ACCURACY OF THE DATES OF THE EVENT

To help identify the phenomena referred to as the Star of Bethlehem, we must first decide when Jesus was born. Many scientific scholars and theologians have studied the documents over the years and not one, that this writer found, can definitively say in what year the birth occurred. While evidence used by various scholars is, for the most part, factual, their conclusions can be very subjective.

In researching documents, I found three occurrences which help fix the date of Christ's birth. First is the final years of King Herod's reign, including his death. Second is the Roman census which required Jesus' parents, Mary and Joseph, to return to their home of ancestry, and last, a series of celestial events.

HEROD'S DEATH

The reign and death of Herod the Great is documented in the gospels of Matthew and Luke, and, for the most part, agreed upon by scholars[Carroll]. Since Jesus was born during the reign of Herod, this provides a good benchmark.

Author Susan S. Carroll writes in her article [The Star of Bethlehem: An Astronomical and Historical Perspective](#), that according to Flavius Josephus (circa 100 AD), Herod died after a lunar eclipse and was buried before Passover. Lunar eclipses during this period occurred:

- March 23, 5 BC (total)
- September 15, 5 BC
- March 13, 4 BC (partial)
- January 10, 1 BC (total)

The March 23, 5 BC eclipse was ruled out because there was not enough time between this eclipse and the burial of Herod's body to conform to local customs and mourning periods. September 15, 5 BC, was ruled out because Herod was alive and in Jericho at his winter palace at that time and, although ill, would have objected strenuously to being buried. The eclipse of March 13, 4 BC was only partial (40%) and ruled out because Josephus referenced the moon turning red (which he attributed to the blood of slain rabbis) and a partial eclipse would not have resulted in a red moon [Kaufmann & Freedman 1999]. Some scholars place Herod's death as late as January, 1 BC, which coincides with the January 10 eclipse.[Carroll, Hughes] A large number of scholars still favor 4 BC as the year of Herod's death.

ROMAN CENSUS

Another piece of evidence comes from the Roman census. This census was not the 20 years census for taxation purposes which David W. Hughes, in his article Star of Bethlehem, used as a reference[Hughes], but the five year census for Roman citizenship and for showing allegiance to Rome, as mentioned by Carroll [Carroll]. The Lukean census was put forth by Caesar Augustus in 746/747 ab urbe condita, which Hughes translates to 8/7 BC. The Holy Bible says that Mary and Joseph traveled to Bethlehem for the census. With that information, Hughes dates the birth of Jesus between 8 BC and 4 BC, assuming that Jesus was born in the last four or so years of Herod's reign.[Carroll, Hughes, Holy Bible] But Hughes fails to mention the census in 3/2 BC.

It was customary for Romans to reaffirm their citizenship every five years and renew the privileges granted Roman citizens. Any persons, especially in the Jewish community, who could trace their ancestry to Jewish royalty were required to travel back to the city of their ancestry. Mary and Joseph, both being descendants of King David, fell into this category. The last census, as mentioned previously, was in 8/7 BC making 3/2 BC exactly five years from the previous Roman census.[Carroll] The year 3 BC coincides with Mary and Joseph's return to Bethlehem.

As to the month of Jesus' birth, the references made in the Bible indicate that Jesus was born six months after his cousin John the Baptist. Other Biblical references indicate John was born in March, therefore, Jesus would have been born the following September, 3 BC.[Carroll, Hughes, Holy Bible] Hughes deduction of dates and times is based on the Roman census of 8/7 BC. If he had used the 5-year census of 3/2 BC, he would have come up with the same conclusions as Carroll.

2. POSSIBLE ASTRONOMICAL ORIGINS

Celestial events discussed by Carroll and Hughes include conjunctions, lunar eclipses, comets and novae. The reader should remember that the Bible only mentions the word "star" four times in Matthew, but nowhere else in the Bible, not even Luke [Holy Bible].

NOVA

Chinese astronomers recorded a nova in Capricorn that was visible during March-April, 5 BC. While Carroll states that the nova was visible for 70 days, but only provides the months of March – April, 5 BC, Hughes provides more detail on the date stating the nova was visible for 70 days *between* 9 March and 6 April. [Carroll, Hughes] It's not understood what the significance of 70 days is, since there are not 70 days between 9 March and 6 April. Later, Hughes describes the nova as sui-hsing (a comet with a tail) and provides the coordinates as RA 20.25 h, Dec 15°. Both state that, presumably based on records, the nova was located in the constellation Capricorn for over 70 days [Carroll, Hughes], making it a long duration nova and probably bright. Astronomy software indicates that the celestial coordinates provided by Hughes resulted in Pegasus, not in Capricorn. With more time, I would like to research the difference in constellations. Also, the book of Matthew stated that the Star of Bethlehem moved from the eastern sky to the south; a nova would have been stationary. [Carroll, Hughes, Holy Bible, Starry Night Pro, Redshift 2] It is not likely the star was a nova.

COMETS

Carroll discusses two comets recorded by Chinese astronomers – one in 5 BC and one in 4 BC. Hughes mentions only the comet in 4 BC. While the comet of 5 BC had an observable tail, the comet of 4 BC did not. While the Chinese thought of comets as “broom stars”, looking to them with favor as sweeping away old and bringing in the new, most people of Persia and the Roman Empire, especially astronomers/Magi thought of comets as harbingers of disaster. It is unlikely that a comet would have been the star to welcome in the birth of the Jewish Messiah or to inspire the Magi to make the long journey to Bethlehem.[Carroll, Hughes]

While Carroll has some interesting points, she makes a fundamental mistake when she states “Matthew’s account clearly described a star; it is highly unlikely that he would have mistaken a comet for a star.”[Carroll] Two thousand years ago the word ‘star’ was a generic term for any astronomical object. Planets were wandering stars, novae were new stars, comets were hairy stars and meteors were shooting stars. So, when referencing Matthew, the use of the word ‘star’ could have meant any one of these objects [Hughes].

CONJUNCTIONS

Of all the celestial events, a conjunction of Jupiter and another planet or star provides the highest probability for Matthew’s star. A conjunction of the planets Jupiter and Saturn was of importance to the astrological Magi since Jupiter was known as the “planet of Kings” and Saturn as the “Protector of the Jews [Carroll].” The conjunction would indicate where they should go, the event to expect, and when the event was to take place. Jupiter–Saturn conjunctions were viewed as important religious and political events.

According to Carroll, there was a triple conjunction of Jupiter and Saturn in late May, September, and early December of 7 BC, all occurring in the constellation Pisces, which has long been associated with the Hebrew nation. Although Jupiter and Saturn never came close enough to form what appeared to be a single point of light, it could have been of great significance to the “trained” Magi. [Carroll]

Hughes goes into more detail by reporting the dates and separations as 5/27/07 BC, 1°; 10/6/07 BC, 1°; 11/1/07 BC, 1.2°; 12/1/07 BC, 1.05°. All dates were referenced with astronomy software and separations confirmed.[Hughes, Starry Night Pro]

If the triple conjunction in 7 BC was not enough to start the Magi on their trek to Bethlehem, then two months later in February, 6 BC there was a conjunction of Jupiter, Mars and Saturn, all within 8 degrees of each other and in the constellation Pisces. This too was a rare occurrence, happening approximately once every 800 years, obviously of great significance to the Magi/astronomers of the time.[Carroll, Hughes]

These two events could easily have been interpreted by the Magi as signs that the Jewish Messiah had been, or was about to be born.[Hughes] However, Carroll later writes that these astronomical events pale by comparison to the events of an 18 month period during 3-2 BC, calling it one of the most remarkable periods for celestial events in the last 3000 years. The Roman Empire was in celebration of its 750th year and the conjunctions seemed to confirm its greatness.[Carroll] Actually, the 19 month period saw the following celestial events and conjunctions: 5/19/03 BC, Saturn/Mercury; 6/12/03 BC, Venus/Saturn; 8/12/03 BC, Jupiter/Venus; 6/17/02 BC, Jupiter/Venus.[Carroll]

On December 25, 2 BC, Jupiter came to a normal stationary position, as a result of retrograde motion, in the constellation Virgo. For six days, Jupiter was visually motionless.[Carroll]

Carroll states the conjunction 8/12/03 BC, Jupiter/Venus occurred in Cancer, but astronomy software shows the occurrence in Leo.[Carroll, Starry Night Pro, Redshift 2]

3. POPULAR MISCONCEPTIONS

Over the years, there has been a misunderstanding about the phrase “we have seen his star in the east” from Matthew, King James version. A more accurate translation is “we have seen his star at its rising”. [Carroll]

The Magi, making most of their daily observations in the early morning, would have seen the Jupiter/Venus conjunction of August, 3 BC. Searching for further signs, they found the triple conjunction of Jupiter with Regulus. The conjunction on June 17, 2 BC, of Jupiter and Venus, probably brought the Magi to Jerusalem. Observing this conjunction from Mesopotamia, the Magi would have seen this conjunction on the western horizon, precisely in the direction of Judaea.[Carroll]

It is hard to imagine that the star in Matthew was anything other than a “normal” planetary conjunction. For thousands of years, the people of the “civilized world” had

witnessed these celestial events, so it is not surprising that neither Herod nor the populace of Jerusalem noticed the star (Matthew 2:3), or witnessed its first appearance (Matthew 2:7). This would indicate that the event was fairly insignificant. Throughout the years, exaggerations of the star's brightness were introduced in terms such as 'indescribably great', 'its light was unspeakable' and 'new'. This must be compared to the adjectively unadorned star in Matthew.[Hughes]

4. CONCLUSION

As a person of faith and science, I am drawn to Bill Allen's words, "Faith and science have at least one thing in common: Both are lifelong searches for the truth. But while faith is an unshakable belief in the unseen, science is the study of testable, observable phenomena. The two coexist, and may at times compliment each other. But neither should be asked to validate the other. Scientists have no more business questioning the existence of God than theologians had telling Galileo the Earth was the center of the universe [Allen]."

There is the possibility the star is fictitious, but I find this hard to accept. People at that time in history believed celestial events to be reliable scientific indicators of present and future events. However, Judaism belief regarded the Gentile forms of astrology as blasphemy. [Carroll]

To the magi, who were professional astrologers, the celestial events signifying the birth of Jesus were significant, but not necessarily to the average person. Judaism shunned any belief in astrology or that the stars had divine influence over their daily lives, which is why the Gospel of Matthew is so believable. Matthew 2 tells it like it probably happened; nothing really spectacular, but certainly noticeable for those who took the time to look at the sky.

Both articles are based on fact and supposition, clearly relying on the writings of individuals who themselves had nothing more than word of mouth to recall information. While small errors were found in both documents, such as incorrect constellations and angular separation of objects, I found Carroll's work provided more detail and evidence to support her assertions.

In closing, I propose that Herod's death occurred in 1 BC because the date corresponds to the Roman census, and Mary and Joseph's return to Bethlehem in 3 BC. I believe it is most likely that Jesus was born in September, 3/2 BC (you do the math on how many fewer shopping days you get) in Bethlehem and the Star of Bethlehem was Jupiter. While not a conjunction, Jupiter was the brightest "star" in the sky on December 25. From Jerusalem it would have appeared to stand still as it began its retrograde motion on the 25th directly over Bethlehem. During my visits to the Golan Heights and Syria, I viewed many areas of sparse vegetation which offered an excellent view of the lands south and east. A star 10 degrees altitude above the horizon, such as Jupiter, would have been clearly visible.

5. REFERENCES

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