

ASTRONOMY

Star of Bethlehem

Astronomers have suggested several explanations for the Star of Bethlehem: a brilliant meteor, a comet, a supernova and an unusual configuration of planets, Ann Ewing reports.

► THE TRUE NATURE of the Star of Bethlehem that guided the Three Wise Men to the birthplace of Jesus is shrouded in mystery and may forever remain so.

However, astronomers, who are often asked during the Christmas season for an explanation of the "Star," have made many suggestions concerning it. Included among their ideas are a comet, a supernova, a brilliant meteor and an unusual configuration of planets.

The exact date of the birth of Jesus is not known with certainty, but it was during or before 4 B.C.—the year King Herod died—and possibly as early as 11 B.C. Because of the uncertainty concerning the date, the question of what the Star really was is not apt to be settled.

Whether the appearance of the Star is legend, miracle or scientific fact each person must decide for himself. But every year at the Christmas season, renewed efforts are made to interpret this event of nearly two thousand years ago.

The story, which has been handed down through the ages, is limited to a few verses in the second chapter of the Gospel according to St. Matthew. In the King James version the pertinent parts read: ". . . Behold, there came wise men from the east to Jerusalem, Saying, Where is he that is born King of the Jews? for we have seen his star in the east, and are come to worship him. . . ."

"Then Herod, when he had privily called the wise men, enquired of them diligently what time the star appeared. And he sent them to Bethlehem, . . . they departed; and, lo, the star, which they saw in the east, went before them, till it came and stood over where the young child was.

"When they saw the star, they rejoiced with exceeding great joy. . . ."

Brief Account Symbolic

Although this account is brief, it has had great appeal as a symbol of the advent of Jesus. And in search of an explanation, astronomers are not limited to confining the word "star" to its present use. The word planet means wandering star, nova means new star, comet means hairy star and a meteor even today is called a shooting or falling star.

Although the planet Venus has been suggested as being the Star that the Wise Men saw, since it is one of the most prominent objects in the sky, the Magi's knowledge of astronomy was sufficiently good to make it doubtful that the sign they sought was such a well-known object.

One suggestion is that the Star might have been an extremely bright meteor, one

of the brilliant objects called fireballs. Although fireballs make a spectacular display in the night sky, their light lasts only a few seconds. It would seem likely that the Star of the Magi was something less transient.

Another possibility is that the Star of Bethlehem was a comet. When these vagabonds of the solar system come close to the sun, they brighten considerably, developing a tail that is sometimes very conspicuous.

Comets are visible to the unaided eye for not more than a few months, which would help to satisfy the time requirement. Also, the ancients regarded comets as forerunners of important events.

Dr. Robert S. Richardson of Griffith Observatory, Los Angeles, has reported that there is some indication the Star of Bethlehem might have been Halley's comet. An extensive search of old chronicles, he found, reveals definite evidence of a comet at the proper season and in the right part of the sky for every one of the 27 times that Halley's comet has visited the earth between 87 B.C. and 1910 A.D.

One of the earliest and, at the same time, one of the most certain appearances was in



HALLEY'S COMET—A spectacular appearance of Halley's comet, shown here as seen in 1910, may have started the Wise Men on their search for the Christ Child.

11 B.C. As stated before, the date of the birth of Jesus is not known, except that it was probably before 4 B.C.

Although this is six years after the appearance of the comet, Dr. Richardson believes history is so indefinite that the interval is within the limit of permissible error.

A bright comet, whether Halley's or another, could not fail to arouse universal wonder and excitement as a sign heralding the birth of Jesus.

One astronomical phenomenon that holds promise as an explanation for the Star is itself a mystery, the nova or supernova. A "new star" occurs when a previously normal star suddenly blazes forth, shining with great brilliance. Although most novae do not attain the brightness generally attributed to the Star of Bethlehem, a supernova would have reached the reported brilliance.

However, such a star outshining most others in the sky would undoubtedly have been recorded by other ancient peoples, and no such record has been found.

Another suggestion often made to explain the Star of Bethlehem is that of an unusual configuration of planets. At rare intervals, two or three of the bright planets are seen very close together in the sky.

Kepler Suggested Conjunction

The famed astronomer, Johannes Kepler, observed a close approach of the planets Jupiter and Saturn in December, 1603, in which Mars later joined. He was very impressed with this triple conjunction, and suggested that something similar could have occurred at about the time Jesus was born.

He calculated the motions of these planets backward and found that such a conjunction had taken place in 6 B.C. However, checks with planetarium projectors have shown that the sun was very near the planets at that time, thus the conjunction would have been very difficult to see.

During the Christmas season, many planetariums around the country traditionally show visitors how the December sky looked nearly two thousand years ago. These demonstrations usually include some of the possible explanations for the Star of Bethlehem.

But perhaps more important than any explanation of the Star is its value as a symbol of great and exalted ideals.

Dr. Richardson believes that there is still another scrap of evidence making the visit of Halley's comet in 11 B.C. of exceptional interest. During the latter part of August of that year, it is recorded that Halley's comet was in the constellation of Gemini, the twins, a little north of the two bright stars, Castor and Pollux.

The latitude of Bethlehem is 31 degrees, 42 minutes north, and about two thousand years ago Castor and Pollux were also about 32 degrees north of the celestial equator. This means that Castor and Pollux in their daily journey across the sky, passed through the zenith of Bethlehem.