

Looking for the Star, or Coming to Adore?

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What do we know about the Star that, according to Matthew's Gospel, guided the Magi to Bethlehem to worship the baby Jesus? Was it just a feature that Matthew added to his narrative to convey a particular message to his readers, or was there an astronomical event to which he was referring? Vatican astronomer, Guy Consolmagno SJ presents various theories about the Star of Bethlehem... but should we be preoccupied with calculations and planetary conjunctions?

'Do you sit around the Vatican commissary,' the reporter asked me, 'discussing what the Star of Bethlehem might have been?'

I guess he was puzzled as to what actually goes on at the Vatican Observatory (<http://www.vaticanobservatory.org/>), where I work as an astronomer. At least he asked. A few years ago, a reporter for *The Independent* stated with great authority (and without actually bothering to get in touch with us) that the chief business of the Vatican Observatory was indeed to determine the nature of the Star of Bethlehem. He obviously hadn't done his research; years earlier, the *Chicago Tribune* had asserted, with equal authority, that our real task was to cast the Pope's horoscopes!

And in fact, at lunch today the question of the Star of Bethlehem did come up: 'Italian television wants to come here and film a story about the Star. What do we tell them?'

The whole question of 'what was the Star of Bethlehem,' asked of a Vatican astronomer, has hidden within it all sorts of wildly wrong assumptions. It assumes that our position at the Vatican gives us some special insight into the issue. (It doesn't. We don't know anything more than anyone else who's looked casually into the issue.) It assumes that there is some factual 'answer' that can be demonstrated in the same way, mysterious to most journalists; that science seems to speak definitively on lots of other things. (There isn't; and for that matter, it doesn't. Science describes nature, it tries to explain nature, but our descriptions and explanations are never definitive. They are always open to further refinements and development.)

And it assumes that the astronomical question is the question that's most interesting. In fact, to me it's merely the teaser of a much deeper puzzle about the whole Star of Bethlehem story.

When I go back and read those twelve verses in Matthew's Gospel (2:1-12) my own first reaction is to ask, 'what was that all about?'

The easiest way to deal with this story is to assume it is a pious tale, probably written to signify that Jesus was as much a king as any secular ruler. Caesar Augustus, after all, used astrological signs to shore up his legitimacy as Rome's emperor. More subtly, it can be read as a foreshadowing of how the message of Jesus would find fertile ground among the Gentiles.

But there are some nagging problems with that simple explanation.

Were such 'pious tales' common enough among the culture in which Matthew's Gospel was written that anyone reading this back then would have understood that it was meant to be taken symbolically? We

can't say for sure; while there's plenty that was written in the Christian milieu in the century following the gospels, there isn't a whole lot of other literature that specifically came from the same time and place as the gospels, except for the gospels themselves.

Is the outreach to the Gentiles a big part of Matthew's Gospel, or was he speaking more to a Jewish audience? One can see both sides argued among the scholars; the Magi story itself is cited as one of the chief bits of evidence for supporting the former view, so that doesn't really get us much further.

There's another question that bothers me: if this is a pious story about wise Gentiles accepting Jesus, why would such 'wise men' be seen as coming from the east? Why have the wise men not come from Greece or Rome, the source of culture and wisdom during that epoch, and the home of the Gentiles who were coming into Matthew's Church?

And why were they astrologers?

Astrology held a most peculiar position in ancient Jewish culture. On the one hand, the study of astrology for forecasting the future was strongly forbidden in any number of places in Hebrew scripture. Where modern astronomers think astrology is wrong because it doesn't work, the Jews recognized it as morally wrong, on theological grounds. Asserting the controlling power of the stars denies the power of God.

But that doesn't mean the Jews didn't believe in it. My Jewish friends tell me that you can find mosaics of the zodiac in ancient synagogues. They knew that casting horoscopes was a bad thing to do; but they accepted the whole cosmology of their time and place, and the best science of their day taught them that the complex and bizarre changes that occur in human affairs could find their parallel in the complex and at times bizarre motions of the planets.

For example, the Jewish historian, Josephus in *The Jewish War* refers to astrological signs when describing the destruction of the Temple:

Thus were the miserable people persuaded by these deceivers, and such as belied God himself; while they did not attend nor give credit to the signs that were so evident, and did so plainly foretell their future desolation, but, like men infatuated, without either eyes to see or minds to consider, did not regard the denunciations that God made to them. Thus there was a star resembling a sword, which stood over the city, and a comet, that continued a whole year. (Book IV, Ch 5, Sec. 3).

There is in fact a Jewish parallel to the Matthew story in a midrash on the birth of Abraham, which describes how his birth was foretold by astrologers as a threat to the king of Babylon, such that Abraham wound up being hidden for three years from the soldiers of the king. Scholars can argue how much this story and that of Matthew influenced one another; for our purposes, it's enough to note its existence as evidence of the complex attitude of Judaism towards astrology.

In any event, I can only leave open the possibility that the story in Matthew is a parable with a message, but not a factual account of an actual astronomical event.

Of course, the other extreme is also possible. Maybe there was a totally miraculous star, zooming about the sky like a UFO, guiding three kings to the stable in Bethlehem.

I don't particularly like this interpretation either, however. For one thing, it's internally inconsistent. Why wouldn't anyone in Jerusalem notice such a star?

And it is inconsistent with the way we see God acting, over and over again, in salvation history. God has the power to create such a UFO, for sure. But in the same way, He also had the power to send Jesus into the world fully grown, a Deity dressed up in a man-suit like some eastern avatar, surrounded by unmistakable pomp and power: the image of the expected messiah that no one could have mistaken. Instead, as always, God showed what we might call supernatural restraint: choosing instead to come as an infant, born into the world as any other human, and subject to the very laws that He had used to form this universe.

And so what would be so out of line to time this birth with a divine coincidence, a chance arrangement of stars and planets?

A sign, by its very nature, means something out of the ordinary. But the one thing about the stars is that, with certain exceptions, they are orderly and predictable. The same constellations appear during the same seasons every year, and any change in their positions is so slow as to be undetectable by the human eye during one person's lifetime.

Among those exceptions are stars that suddenly go 'nova' – or, more impressively, 'supernova'. A nova, where a faint star briefly becomes a bright star, is notable if you know the stars well, but otherwise might go unnoticed. These happen fairly often, however; probably one is visible to the naked eye every ten years or so. That hardly seems spectacular enough to announce the coming of a messiah.

Supernovae are spectacular and unusual lights in the sky; if close enough to us, they can be seen even in the daytime. That would certainly be an attention-grabber. And they are far rarer. It has been 400 years since the last naked-eye supernova occurred in our galaxy. However, they do leave behind remnants. Even with a small telescope you can see the Crab Nebula, the remains of a supernova that occurred in 1054 AD. But there are no unaccounted-for remains of a supernova from two thousand years ago.

Comets are another spectacular and startling sign in the sky. However, they were universally interpreted as signs of doom, not joy at the birth of a king. See how Josephus referred to them in the passage quoted above, an example of the Jewish attitude contemporary with the gospels.

Planets do change their positions among the stars (hence their name; the word means 'wanderers'). Most attempts at working out a possible astronomical explanation for the star of Bethlehem look for interesting or unusual chance conjunctions of the planets. Johannes Kepler in the early 17th century, armed for the first time with accurate positions of the planets (which he got from Tycho Brahe's observations) and his new theory for planetary motions in ellipses about the Sun, immediately tried playing this game by making tedious calculations of planetary positions for the time of Christ. Nowadays, anyone with a laptop can plug the date 'December 25, 1 BC' (or whenever you think is a more likely birthday) into your favorite planetarium software package and see where the planets would have been.

The trick, though, is to find a solution that is consistent with the temporal setting of Matthew (probably in the spring, when shepherds would be out at night tending their flocks, in a year while Herod was still alive and king); consistent with the description of the 'star' (something to do with its rising); consistent with an explanation of how it would indicate the birth of a king, and how Judea would be indicated as

the location of this birth; and consistent with the apparent fact that only astrologers were wise to this event.

My own personal favorite solution to these constraints is in Michael Molnar's 2000 book, *The Star of Bethlehem*. He argues that there was a conjunction of all the planets and the new Moon, similar to that used by Augustus to support his own royal birth, occurring in the constellation Aries (which he argues is connected with Judea), in late March of 4 BC. Most appealing, this conjunction occurred when the planets rose with the Sun in the east – hence fitting the Matthew description, while explaining why only astrologers were aware of this event. They could calculate its occurrence, but no one, not even them, would actually see these planets: they'd be hidden in the glare of the rising Sun.

It's all quite neat. And indeed it's rather startling to realize that such an event really did occur in the sky about the time when Jesus may well have been born. If you have a planetarium program, you can look it up for yourself.

But was this really what Matthew was talking about? There's hardly a consensus on this point. My fellow Vatican astronomer, Fr Chris Corbally, has described a completely different set of conjunctions at <http://www.alivepublishing.co.uk/faith-today-articles/the-cosmology-of-the-magi>. We'll never know for sure. And perhaps that's just as well.

Because the real message is outside the realm of astronomical calculations. The events that draw each one of us to encounter our Saviour are rooted in our own lives, our own histories, our own belief systems. Every such set of events is inherently improbable. And thus, we each have our own unique story to tell of how we wound up worshipping at the manger.

And those are stories too important for idle chat at the Vatican commissary, too personal for yet another journalist's notebook. For, like the Magi, the very core of our being is expressed in the path we have chosen, by the stars that have guided us.

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