Astronomers including Kepler have debated the nature of the Star of Bethlehem
ALAMY

NIGHT SKY: DECEMBER

December night sky: Is planet conjunction the true star?

Chris Lintott

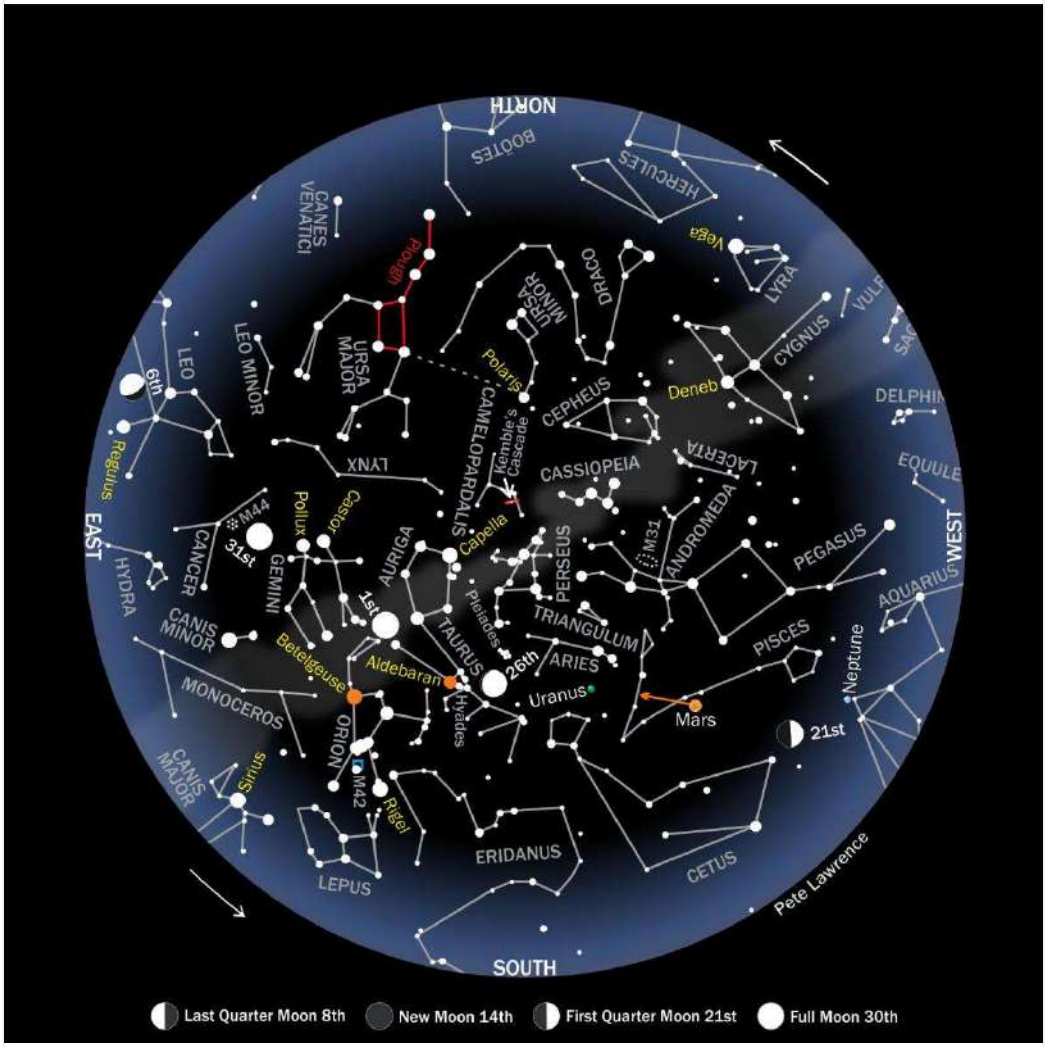
Tuesday December 01 2020, 12.01am, The Times

As December arrives, writers of night sky columns have been known to reach for the hoary old trope of debating the nature of the Star of Bethlehem. Astronomers as distinguished as Kepler, who thought it may have been a supernova, have joined in this debate, and almost every astronomical phenomenon, from spectacular comets to speculative alien visitation, has been suggested as an explanation for the true star.

One of the more obscure possibilities is a series of conjunctions between Jupiter and Saturn; the planets came close together in the sky three times in the year 7BC. It may be harder to imagine on a Christmas card than a beautiful comet or brightly shining nova, but at least we know it happened. I mention this because

December brings us a chance to observe a very close conjunction between Jupiter and Saturn and judge for ourselves whether such a sight might be enough to encourage a long camel ride.

The two planets are closest on the evening of the 21st, when they will be about a tenth of a degree apart; compare this with the apparent size of the full moon, which spans half a degree. This is the closest the planets have come since before the invention of the telescope, and the two giant worlds will be close enough that without careful inspection the naked eye will perceive only the more brilliant Jupiter, with Saturn lost in the glare. Look patiently, or through binoculars or a small telescope, and Saturn should appear.



To use this chart hold it up so that the direction in which you are looking is at the bottom of the chart. The bottom edge of the chart will then represent your real horizon and the centre represents the point directly overhead. The view is correct for the UK at 11pm GMT on December 1, 10pm GMT on December 15 and 9pm GMT on December 31

Apart from quirky historical joy from seeing something not seen since the midst of the Thirty Years' War, the real interest in watching the conjunction comes in the days before and after closest approach, when the slow movement of the planets in their orbits bring them first closer together and then farther apart. This celestial ballet will be easy to watch — the two planets are low in the west after sunset throughout — and will provide a decent target for photographers armed with nothing more than a decent smartphone. The crescent moon passes by on the 16th and 17th, adding lustre to the scene.

The traditional highlight of December stargazing arrives on the morning of the 14th with the peak of the Geminid meteor shower. The Geminids, which produce relatively slow-moving and bright meteors, have strengthened over the past decade to become the best of the year's regular showers, and the dark nights of December make them easier to see than their rival Perseids, which peak in August. With the moon out of the way, a few hours spent watching the sky on the nights of the 13th or 14th should bring rich reward, though from Britain rates should be significantly higher after midnight.

This is partly because of the timing of this year's maximum, but it is also because the shower's radiant, the point in the sky from which meteors that belong to the shower seem to come from, rises higher in the sky as the night wears on. After midnight we are on the leading edge of Earth, sweeping up meteors as we travel on our orbit around the sun, rather than merely encountering those that catch up with us.

The Geminids can be enjoyed by anyone. More dedicated meteor watchers might want to keep an eye on the Ursids this year. This normally unspectacular shower peaks after sunrise on the 22nd, but between 5am and 7am that day scientists who track meteorids, the tiny particles that burn up in our atmosphere producing a meteor trail, predict a few shortlived bursts of greatly enhanced activity. If the weather co-operates, this might be worth setting the alarm for.

Anyone awake early should also look for brilliant Venus low in the southeast before dawn. Though not high above the horizon, Earth's sister planet is bright enough that it easily outshines every star in the night sky. Mars is still visible in the evening sky, but it is rather overshadowed by the rest of the solar system's show this month.

The stellar sky is something of an afterthought this month, but December is a good month to enjoy the glorious Milky Way, which stretches from near Orion in the southeast through Cassiopeia almost overhead and then down to the northwestern horizon.

A slow scan from horizon to horizon with binoculars is a rewarding way to enjoy the deep sky without worrying too much about following maps, though marked on this month's chart is Kemble's Cascade in Camelopardalis. This three-degree long, straight chain of coloured stars stands out in 7x50 binoculars, and is a useful staging post on the edge of Cassiopeia's cluster-rich starfields.

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V **V Andrews** | DECEMBER

I love the painting that illustrates this article. Who is it by please?

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P **Peter Humphreys** | DECEMBER

7 BC is about the right date for Jesus' birth (the transition between BC and AD was obviously organised by someone like Capita), but I can't imagine why the sight of two planets together would be seen as "a star". Furthermore, conjunctions between Jupiter and Saturn, say, happen every twenty years, and conjunctions between other planets happen quite often (for example, there's a pretty close one between Mars and Venus on July 13th next year). The "wise men", as astrologers, would probably have seen several conjunctions during their lives, so they would almost be commonplace.

F **Fingerpicker** | DECEMBER

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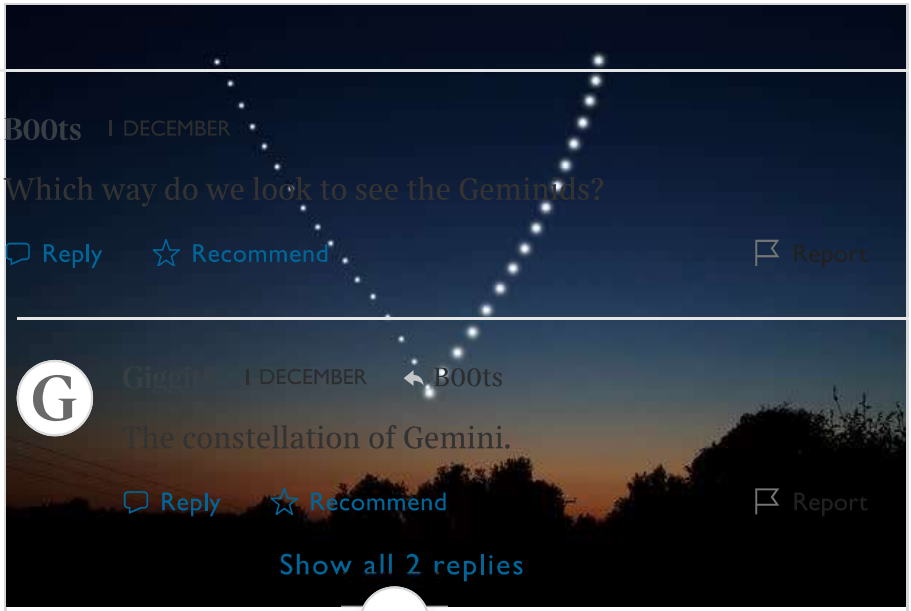
Pity there is no practical viewing information for the main feature of the article. SkyatNightMagazine has some useful times and directions to look - always assuming it's not pouring with rain!

https://www.skyatnightmagazine.com/advice/skills/great-conjunction-jupiter-saturn/



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PGP1948 1 DECEMBER

I can recommend the Sky View app as a very easy way to identify just about anything in the sky from rocket bodies to planets. Don't mean this as an advert, I'm not in any way rewarded by it, but for anyone to be able to point the phone at any part of the sky to identify stuff it's brilliant.

Reply 2 Recommend Report

bluearmyfaction 1 DECEMBER

OK, so there's an interesting conjunction.

Where? Not in the article, not on the map.

Reply 1 Recommend Report

Richard Foster 1 DECEMBER bluearmyfaction

The caption to the chart makes it clear:
To use this chart hold it up so that the direction in which you are looking is at the bottom of the chart. The bottom edge of the chart will then represent your real horizon

and the centre represents the point directly overhead.

The view is correct for the UK at 11pm GMT on December 1, 10pm GMT on December 15 and 9pm GMT on December 31.

Both Saturn and Jupiter will have set by 11 pm GMT tonight, so they won't be on the chart. Pop outside tonight after you've had your tea and you should see them in the west.

M Scott 1 DECEMBER

Reply 4 Recommend Report

Surely everyone knows that the Star of Bethlehem was actually Santa's sleigh, circling in search of the true meaning of Christmas.

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Pual Martin 1 DECEMBER *Edited*

in the year 7BC

Last century when Stargazer simulators became available for the PC I laboriously wound the clock back on one, set the location to south east of Jerusalem and followed the "star"; the conjunction seemed to be demonstrated elegantly.

For some reason, either a new book or TV there seemed to have been some publicity on the issue. I forget ....

Reply 1 Recommend Report

Robert Munro 1 DECEMBER *Edited*

Don't you mean December Night Sky?

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