

New analysis prompts rethinking of date, time for Vermeer's View of Delft

Enlarge / Johannes Vermeer's *View of Delft* is considered to be his greatest masterpiece.

Johannes Vermeer/Mauritshuis, The Hague

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The 17th-century Dutch master Johannes Vermeer is perhaps best known in the popular imagination for *Girl with a Pearl Earring*, which inspired both a 1999 novel and a 2003 film adaptation of said novel. But among art historians, Vermeer's masterpiece is *View of Delft*, a cityscape of the painter's hometown that beautifully illustrates Vermeer's skill with light and shadow.

Art historians have long thought that Vermeer likely created *View of Delft* around 1660-1661, but because we have so little biographical information about the artist, pinpointing the exact date, and even time of day, that the scene represents has proven challenging. Some have argued for late spring or early summer, with times ranging from mid-day to sunset. A new astronomical analysis concludes that Anthony Bailey, author of *Vermeer: A View of Delft* (2001), was correct in concluding that the painting depicts the town in the morning, "with the sun striking the buildings from the south east." Furthermore, the time is most likely 8am, on September 3 or 4, in the year

1659 or earlier.

That's the conclusion of Donald Olson, an astronomer at Texas State University known as the "celestial sleuth" for his work in so-called "forensic astronomy," and several colleagues, who describe their analysis in the September 2020 issue of *Sky and Telescope* (subscription required). Over the years, Olson has found evidence that the blood-red sunset that inspired Edvard Munch's *The Scream* was likely an after-effect of the 1883 eruption of Mount Krakatoa in Indonesia; that the Moon may have contributed to the sinking of the *Titanic*; helped identify the precise location of Julius Caesar's landing site in Britain in 55 BC; and showed that Mary Shelley was probably telling the truth about a moonlit "waking dream" that inspired *Frankenstein*, among other findings.

More recently, in 2015, Olson and a few colleagues set out to determine the precise time of day that Life magazine photographer Alfred Eisenstaedt took his most famous photograph: a sailor and a woman in a white nurse's uniform kissing in the middle of Times Square to celebrate Japan's surrender on August 14, 1945 (known as *V-J- Day in Times Square*). Pinpointing the exact time the photograph was taken helped rule out several people who claimed to be the people in the photograph.

To make that determination, Olson et al. studied a prominent shade that falls across the Lowe's Building in the image, just beyond the Bond Clothes clock (which isn't clearly readable). Since every tall building in Manhattan is basically a sundial, the team studied hundreds of photographs and maps from the 1940s to identify the building casting that shadow. They concluded it had to be an L-shaped sign advertising the Astor Roof Garden. They even built a scale model to make sure. From there, they could easily infer that the photograph was taken at 5:51pm.

- Vermeer's original painting.
Johannes Vermeer/Mauritshuis, The Hague
- Delft today.
- Astronomer Don Olson stands beside Vermeer's masterpiece at Mauritshuis in The Hague.
Marilynn Olson
- The artist's location for *View of Delft* was likely the upper floor of an inn, as seen in this 1736 print.
Collection of Don Olson
- Detail of clock face in Vermeer's *View of Delft*
Johannes Vermeer/Mauritshuis, The Hague
- Vermeer's depiction of light and shadow on the stone octagon of the Nieuwe Kerk tower (left) matches the photograph (right) when the Sun's azimuth was near 110 degrees.

Olson became interested in researching the Vermeer painting when a colleague came up to him after one of his talks and asked if his techniques could be applied to the *View of Delft*. Olson was unfamiliar with the painting, but once he had a look, he realized that he could adopt a similar approach as the one he used for the *V-J Day in Times Square* photograph.

He couldn't find a similar long shadow from one building being cast onto another, but Vermeer's cityscape includes a church with an octagon-shaped (eight-sided) bell tower—the Nieuwe Kerk—in which some of the faces are lit and others are dark. "The best part is one of the faces is largely dark, but it is projection lit," Olson told Ars. "That's a very unusual lighting effect, it only happens for a few minutes. So I thought I could do something with that."

Ultimately, the team calculated that the Sun's azimuth would have been near 110 degrees. The tower also helped narrow down the year. There are no bells depicted in the tower, unlike today, where three of the eight sides house the bells of a carillon. It's known that the bells were cast in 1659 and 1660, and installed between April and September, 1660. So

Vermeer's scene must capture a day in 1659 or earlier. Only two dates in 1659 met that criteria: April 6 and September 3.

To help pinpoint the time of day, Olson et al. relied on Vermeer's depiction of the Schiedam Gate clock, which at first glance would seem to indicate a time of about 7:10. Then one of Olson's student co-authors noticed that all the images of 17th-century clocks they had been perusing showed clock faces with single hands, not the hour and minute hands found on modern clocks.

Experts in Dutch architecture confirmed that clocks of that era only had a single hand. Co-author Tim Jenison even created a Photoshop version of a closeup of Vermeer's clock face, removing the surrounding globule, which clearly showed a single long hand whose ends pointed to the 8 and the 2 on the clock face. The direction of the shadows in the painting makes it clear that this is a morning scene, per Olson et al., thereby ruling out all the options save 8am.

Olson and his colleagues spent a year on the project, even traveling to Delft to make on-site measurements, including topographical surveys and taking photographs roughly in line with what would have been Vermeer's viewpoint while capturing the scene (possibly with the aid of an optical device like a camera obscura or telescope). After consulting 17th-century maps and prints, 19th-century maps, and Google Earth, Olson et al. determined that Vermeer was likely sitting on the upper floor of an inn, just south of the Kolk (a city harbor shaped like a triangle).

"If Vermeer intended to portray a morning scene consistent with the time shown by the clock in the painting, then the combined evidence—the hour hand of the Schiedam Gate clock, the empty bell tower, and the Sun's position in the sky—indicates that the painting dates from 1659 or an earlier year and matches the view that the artist could have observed from his window at the inn at 8:00 a.m. on a date near

September 3," Olson and his co-authors concluded.

Granted, the Dutch master often took weeks, months, and sometimes years to complete his works. However, per Olson et al., "His remarkably accurate depiction of the distinctive and fleeting pattern of light and shadows on the Nieuwe Kerk suggests that at least this detail was inspired by direct observation of the sunlit tower rising above the wall and roofs of Delft."

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