

A walk at sunset instilled Norwegian artist Edvard Munch with strong emotions when the sky turned blood red. He put his feelings to canvas many times, the most famous version in 1893 with *The Scream*, now one of the world's most widely recognized works of art. The painting's background includes ships in the harbor and the skyline of Christiania (now Oslo) — clues that helped the authors determine when and where Munch became filled with anxiety. Courtesy National Gallery, Oslo. All works by Munch that appear in this article are © 2004 The Munch Museum/The Munch-Ellingsen Group/Artists Rights Society, New York.

WHEN THE SKY RAN RED

The Story Behind *The Scream*

By Donald W. Olson, Russell L. Doescher, and Marilyn S. Olson

The background of Edvard Munch's painting *The Scream* piqued the interest of our intrepid astronomically-oriented historical sleuths. This iconic work of art has a rich history, and a sky-based explanation.

ONLY A FEW ARTWORKS CAN BE CONSIDERED ICONS of popular culture. Everyone knows the enigmatic smile of the *Mona Lisa*, the farm couple with a pitchfork in *American Gothic*, and the pose of the *Thinker*. Among these iconic works, *The Scream*, by Norwegian artist Edvard Munch (1863–1944), has uniquely become the symbol of anxiety in our modern age.

The Scream is of special interest to skygazers because the lurid sky in the painting is the catalyst of the figure's anxiety. Munch's own journals (portions of which we translated from Norwegian) make it clear that the spectacular twilight in *The Scream* was inspired by an actual event:

I was walking along the road with two friends — then the Sun set — all at once the sky became blood red — and I felt overcome with melancholy. I stood still and leaned against the railing, dead tired — clouds like blood and tongues of fire

hung above the blue-black fjord and the city. My friends went on, and I stood alone, trembling with anxiety. I felt a great, unending scream piercing through nature.

Munch never forgot that sky, and during his lifetime he wrote many accounts of this memorable evening. Another version gives more details about the location and the remarkable colors:

One evening I was walking out along a mountain road near Christiania [now Oslo] — together with two companions . . . the Sun went down . . . it was as if a flaming sword of blood slashed open the vault of heaven — the atmosphere turned to blood — with glaring tongues of fire — the hills became deep blue — the fjord shaded into cold blue — among the yellow and red colors — that garish blood-red — on the road — and the railing — my companions' faces became yellow-white — I felt something like a great scream — and truly I heard a great scream.



THIELSKA GALLERIET, STOCKHOLM



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Munch painted other works that were variations of the scene of *The Scream*. In 1892 he created *Despair* (left), followed a year later by another version with a hatless figure, and later by *Anxiety* (right).

Munch painted the most famous version of *The Scream* in 1893 as part of *The Frieze of Life*, a group of works derived from his personal experiences. Between 1892 and 1896 he created multiple variations of the scene with the titles *Despair*, *The Scream*, and *Anxiety*. In each painting the same spectacular twilight sky appears, with figures on a road, a prominent railing, a peninsula extending into the fjord, and a few buildings representing Norway's capital city of Christiania. These details gave us hope that we might be able to answer specific questions: Can this precise location be found? Toward which compass direction is the view shown in *The Scream*? When did Munch and his two friends walk along the road? What did Munch see in the sky?

What Year and Season?

In his 1972 monograph entirely devoted to *The Scream*, Reinhold Heller states that unusually colorful sunsets are “visible in Oslo . . . in the late months of autumn. . . . As the sun then sets, it shines onto the clouds . . . and transforms them into stripes and tongues of intense reds and yellows in the blue sky. The phenomenon is an extremely impressive one, as unforgettable as it is indescribable.” Aware that one of Munch's prose accounts about the red sky was written on January 22, 1892, Heller judged that the original experience occurred shortly before, in the fall of 1891.

A recent BBC documentary about *The Scream* adopts the same explanation. A companion book to the program, *The Private Life of a Masterpiece*, by Monica Bohm-Duchen (2001), notes that “red and yellow wave-like clouds are a climatic

peculiarity of northern Europe, and were frequently painted by artists from the north” and agrees that the event occurred “probably in 1891” during “late autumn.”

At the other extreme, Thomas M. Messer argues in his 1973 study of Munch that “nothing external gives a clue to the horror that impels the outcry” and observes that the “bandlike arrangements that lend intensity and swirling motion to the composition as a whole have often been identified as visualizations of sound waves” but alternately could be “externalizations of force and energy.”

These explanations didn't seem adequate to us. Messer seems to imply that Munch's experience was entirely internal and psychological, yet Munch's written accounts say that a blood-red sky preceded his melancholy and triggered the scream. Moreover, Munch attached great importance to this unusually spectacular twilight, but the sunsets as described by Heller would occur fairly often, perhaps every autumn.

We began by searching astronomical and meteorological records from the period just prior to January 22, 1892, looking (without success) for the impressive event that could have so dramatically affected Munch. But as we learned more about Munch, we realized that the original experience with the twilight sky could have been much earlier. In fact, many paintings created in the 1890s for *The Frieze of Life* were inspired by events from years before, as recorded in his diaries and notebooks. For example, Munch's beloved sister Sophie died in 1877. The artist depicted this tragic scene in a series of works titled *Death in the Sickroom* in 1893 — fully 16 years afterward. We wondered whether this

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pattern of an autobiographical event painted much later held true for *The Scream*. We found support for this idea in a book by Arne Eggum, former chief curator of the Munch Museum, who disagrees with Heller and prefers the summer of 1886 as the probable date for Munch's walk along the mountain road (*Livsfrisen Fra Maleri Til Grafikk*, 1990).

There is other evidence suggesting that the *Scream* event occurred considerably earlier. During a stay in Nice in the winter of 1891–92, Munch discussed art with his friend Christian Skredsvig, who wrote:

For a long time he had wanted to paint the memory of a sunset. Red as blood. No, it *was* coagulated blood. But no one else would perceive it the same way he did. They would think only about clouds. He talked himself sick of this sight that had gripped him with terror. With sadness, because the paltry resources of painting were not adequate. "He is striving after the impossible and has despair as his religion," I thought, but I advised him to paint it — and so he painted his remarkable "Scream."

In recalling his time spent in Nice, Munch himself explicitly mentioned the years of the original inspirations for three of the paintings in *The Frieze of Life*:

. . . the first *Scream* . . . Kiss . . . Melancholy. . . For these a number of rough sketches had already — in 1885–89 — been done in that I had written texts for them — more correctly said, these are illustrations of some memoirs from 1884. . .

The Bohemian Days of the 1880s

Munch helped to date the origin of *The Scream* in another way in a letter to his friend Jens Thiis: "You don't have to go so far in order to explain the genesis of *The Frieze of Life* — its explanation lies in the bohemian time itself."

Although Munch's connection to the bohemian community of artists and writers is well documented for 1884, the bohemian days of his memory can plausibly originate in the second half of the previous year, when Munch was sharing a studio in Christiania with six other young artists. It was in 1883 that Munch exhibited his paintings publicly for the first time at the Art and Industry Exhibition during the summer and the Fall Exhibition in December.

Moreover, Munch almost certainly attended the wildly controversial Christiania premiere of Henrik Ibsen's play *Ghosts* on October 17, 1883. The play, which contrasted the honest, free life of the bohemian artists to the hypocritical conventionality of Norwegian society, polarized the capital. Eggum notes that Munch painted a portrait of one of his friends in the characteristic pose of the bohemian, Osvald, in the play.

But this eventful season for artists was also a lively time for skywatchers, and we now realized that science could explain the blood-red sky in *The Scream*. The end of 1883 and the first months of 1884 had the most spectacular twilights of the last 150 years!

A Volcanic Solution

The volcanic island of Krakatoa in Indonesia erupted in a cataclysmic explosion on August 27, 1883, sending dust and gases high into the atmosphere. Magnificent fiery sunsets and sunrises resulted, first in the Southern Hemisphere, then near the equator, and eventually in northern latitudes, as the cloud of



This woodcut of volcanic activity at Krakatoa appeared in the London illustrated paper, *The Graphic*, on August 11, 1883. Later that month the island blew itself apart in a cataclysmic explosion that sent dust and gases high into the atmosphere. Courtesy Donald Olson.

volcanic aerosols spread worldwide in the following months.

A report issued by the Royal Society in London devoted more than 300 pages to "Unusual Optical Phenomena of the Atmosphere," with a section collecting the "Descriptions of the Unusual Twilight Glows in Various Parts of the World, in 1883–4."

We also checked newspapers and scientific journals from this period and found hundreds of accounts from astonished observers worldwide. The effects had reached New York by November 28, 1883, as reported in the *New York Times*:

Soon after 5 o'clock the western horizon suddenly flamed into a brilliant scarlet, which crimsoned sky and clouds. People in the streets were startled at the unwonted sight and gathered in little groups on all the corners to gaze into the west. Many thought that a great fire was in progress. . . . People were

standing on their steps and gazing from their windows as well as from the streets to wonder at the unusual sight. The clouds gradually deepened to a bloody red hue, and a sanguinary flush was on the sea. . . .

Colored stripes and bands in the sky, like those later painted in *The Scream*, appeared to Pennsylvania residents, who

. . . witnessed a most beautiful and startling phenomenon in the eastern heavens. . . . The sky that morning was fairly aglow with crimson and golden fires, when suddenly, to their great astonishment, an immense American flag, composed of the national colors, stood out in bold relief high in the heavens, continuing in view for a considerable length of time. (*Hanover Spectator*, December 19, 1883)

In England, the journal *Nature* published a lengthy series of reports about the “remarkable sunsets” beginning in December 1883. Newspapers printed dozens of letters with descriptions like the following:

The sunset last evening at Eastbourne surpassed anything of the kind seen on the south coast. The sky changed from a pale orange to a blood red, and it seemed as if the sea itself were one mass of flames. (*Times of London*, November 29, 1883)



The Scream includes two landmarks from 19th-century Christianity: the spire of Vor Frelser's Church (left) and the dome of Trinity Church (below).



William Ascroft, an especially diligent English observer of the twilights, concluded that the “finest occurred midwinter 1883–84, when some deepened into the richest crimson, and were known as ‘Blood Afterglows.’” The English poet Alfred, Lord Tennyson, remembered this season and later used the image:

*Had the fierce ashes of some fiery peak
Been hurl'd so high they ranged about the globe?
For day by day, thro' many a blood-red eve . . .
The wrathful sunset glared. . . .*



Above: Edvard Munch saw the blood-red twilight sky when he looked toward the southwest, over Hovedø island, from the lower viewpoint (red dot) where the Ljabrochausséen road (now Mosseveien) wraps around the western side of the Ekeberg hill. In the painted versions of *The Scream*, Munch combined the railings along Ljabrochausséen with the view down to the harbor from an upper viewpoint on a rocky ledge (blue dot). This map from the 1882 and 1885 editions of Baedeker's *Norway and Sweden: Handbook for Travellers* shows Vor Frelser's Church and Trinity Church (outlined in red), north of where the Akershus peninsula juts into the fjord. Courtesy Donald Olson.

Below: This postcard view from the Ekeberg hill shows the Akershus peninsula and the harbor of Christiania at the turn of the 20th century. The masts of sailing vessels were a common sight in the harbor. Courtesy Donald Olson.



But could Munch have seen the Krakatoa twilights at Christiania's high northern latitude? The reports collected by the Royal Society in London show that the unusual twilight glows appeared in Norway from late November 1883 through the middle of February 1884. At the end of November, astronomers Carl Fredrik Fearnley and Hans Geelmuyden at Christiania Observatory first noticed the "very intense red glow that amazed the observers" and developed into a "red band." The spectacle was clearly widely seen, as Christiania's daily paper reported on November 30th:

A strong light was seen yesterday and today around five o'clock to the west of the city. People believed it was a fire; but it was actually a red refraction in the hazy atmosphere after sunset.

When Lunar Eclipses Go Dark

Krakatoa's optical effects have not been equaled in the last 120 years, but observations after some recent volcanic eruptions have given us an idea of what the skies must have been like in 1883–84.

Readers may recall the colorful twilights of 1991–92 and the very dark lunar eclipse on December 9–10, 1992, following the eruption of Mount Pinatubo in the Philippines. *Sky & Telescope's* volcano expert, Stephen James O'Meara, has noted that when a lunar eclipse occurs soon after a major volcanic eruption, the Moon can appear unusually dark. High concentrations of volcanic aerosols make the Earth's atmosphere more

Below: This 19th-century photograph proves that the Ljabrochausséen road was bordered by railings exactly like those in Munch's artwork. This view, from a spot about 600 meters (1/3 mile) south of where Munch would have been, looks toward the northwest with the Akershus peninsula at the left, and with the spire of Vor Frelser's Church and the dome of Trinity Church in the city skyline just above where the roadway turns in the distance. Photograph by Ole Tobias Olsen. Courtesy Oslo City Museum.

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opaque to sunlight passing through, and less light refracts into the Earth's shadow (*S&T*: April 1993, page 107).

The lunar eclipse of December 30, 1982, and the red twilights seen in that year were similarly affected by the volcano El Chichón in Mexico (reported in the March and April 1983 issues). And veteran skywatchers may remember the lunar eclipse of December 30, 1963, darkened by aerosols from the eruption of Mount Agung in Indonesia.

Following the Krakatoa explosion, astronomers likewise reported to *Nature* that during the total lunar eclipse of October 4, 1884, "the obscuration of the moon was carried to a degree far beyond anything witnessed in the eclipses of recent times," and "the density and blackness of the shadow was far greater than any previous one that I had seen. . . ."

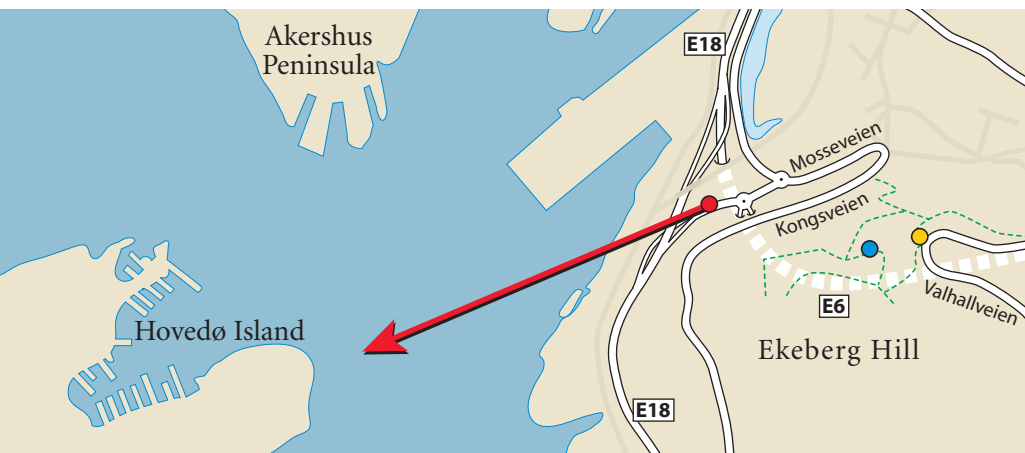
Visiting Norway

If volcanic aerosols from Krakatoa colored the skies when Munch and his friends took their walk, then the date of this experience must have been between the end of November 1883 and the middle of February 1884, therefore near the winter solstice. Such a view of a Krakatoa sunset must have been toward the southwest.

We traveled to Oslo in May 2003 in part to examine documents from Munch's bohemian days in the archives at the Munch Museum and the National Library. To determine the direction of the view shown in *The Scream*, we also spent several days hiking in the hills near Oslo to find the precise location where Munch and his friends were walking when he saw the blood-red sky.

We wanted to compare the topographic features of Oslo with Munch's artwork. But since we were interested in the location of Munch's original experience, rather than how he reworked the motif, we knew that one drawing in particular was the most important for this purpose. Art historians agree that this sketch (cataloged as T126 p. 10 R) is the initial study for the first version of *Despair*, which Munch called "the first *Scream*." As





Left: The roads of Oslo have changed much since the turn of the 20th century, but the woods of Ekeberg hill remain. The authors determined that Munch and his friends were walking along the road now called Mosseveien and he became overcome at the location of the red dot. The yellow dot notes the site of the historic marker, while the blue dot indicates the rocky overlook located a short hike from the road. S&T diagram by Steven Simpson.

Below: On a horseshoe bend of a road called Valhallveien, a historic marker commemorates the inspiration for *The Scream*. However, this road did not exist in the 19th century.



Donald Olson and Russell Doescher overlook Hovedø island from the Ekeberg hill. Photograph by Marilynn Olson.

shown on page 35, this drawing contains specific details: a cliff on the left, a road with a railing turning left and descending beyond the cliff, and, in the fjord, an island with a prominent round hill. Ship masts extend above the horizon, showing that Munch's viewpoint for the drawing had a rather low elevation, less than 30 meters (100 feet) above the water level.

All of the later painted versions, including the most famous *Scream*, have a much higher viewpoint, looking down to small and distant ships in the harbor below, with the city suggested on the right.

So we were actually searching for two locations — with the lower location the more important one because the original experience occurred there. During our visit in Oslo we found both the lower and upper viewing locations on the slopes of a 142-meter-high hill called the Ekeberg.

The upper location is a viewpoint on a rocky ledge 128 meters above the harbor. From this spot, we could see the Akershus peninsula extending into the fjord, as well as the spire of Vor Frelser's Church and the dome of Trinity Church, buildings Munch used to indicate the city skyline. Baedeker tourist guides from the late 19th century specifically advised visitors to "ascend the stony old road . . . pass the farm of Ekeberg, and follow a field-road." After five minutes, one would leave the road and



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walk "to the right for a few hundred paces to a rocky platform affording a fine view of the town and harbour." This panorama was illustrated on dozens of postcards and lantern slides from that time.

Although the view toward the fjord is generally toward the west and southwest, this upper location *cannot* be the precise spot where Munch saw the red twilight and "leaned against the railing, dead tired." The Baedeker maps, along with other early maps that we examined at the Oslo city museum, make it clear that no road (and railing) reached this overlook. (About 140 meters east of the rocky ledge, modern visitors will find a *Scream* historic marker and metal railings on a horseshoe bend of a road called Valhallveien, but this horseshoe bend did not exist in the 19th century. The rocky ledge can still be

By studying the perspective of the cliff and the distinctive round hill on Hovedø island, we could determine Munch's position with remarkable precision, within a few meters.



Above: The authors used this drawing by Munch to find the artist's position when he saw the blood-red twilight in the sky toward the southwest over Hovedø island. The sketch (Munch Museum registration number T126 p. 10 R) shows Ljabrochausséen and is the progenitor of the series of *Despair*, *The Scream*, and *Anxiety*. Courtesy Munch Museum, Oslo.



Top right: The authors determined that Munch was standing here when the volcanically tinted red sunset in the southwestern sky overwhelmed his senses. Today, metal and concrete guardrails line Mosseveien, the road formerly called Ljabrochausséen. The view of the cliff and the island (partly hidden behind the concrete barriers) matches the artist's drawing only from this spot. Photograph by Russell Doescher.



Bottom right: For a better depiction of what Munch saw at the fateful sunset, the authors climbed a few feet up the hillside, allowing them to see over the roof of a warehouse and show the profile of Hovedø island in the fjord. Photograph by Donald Olson.


reached by hiking to the northwest slope of the hill, now rather overgrown by trees.)

The lower viewpoint, the one employed for Munch's first sketch, is on a road that wraps around the western slope of the Ekeberg hill. The street, now called Mosseveien, appears on the 19th-century maps with the name Ljabrochausséen. Art historian Frank Høifødt helped us find a 19th-century photograph showing Ljabrochausséen bordered by railings exactly like those drawn and painted by Munch. The road is only 15 meters above the water level, and dockside cranes now extend above the horizon much as the ship masts do in Munch's drawing.

On the Spot

By studying the perspective of the cliff and the distinctive round hill on Hovedø island, we could determine Munch's position with remarkable precision, within a few meters. This viewpoint is 100 meters from the modern tunnel portals where the E6 motorway passes through the Ekeberg hill, measured in the direction toward the intersection where Mosseveien joins with the E18 motorway. From this spot, Munch's direction of view in the drawing was toward the southwest — exactly where the Krakatoa twilights appeared in the winter of 1883–84.

Munch's own words, along with our topographic results, provide strong evidence that these blood-red afterglows are the connection between one of the world's most famous volcanoes and one of the world's most famous paintings!

Artists and astronomers may look at the sky in different ways, and few of us would perceive a volcanic sunset with the same state of mind that Munch brought to it. But we, like Munch, have experienced extraordinary sky phenomena and associated them in memory with our situation and our lives. We know that our lives are richer because we pay attention to what the skies offer. In this way, we have an inside connection to one of the world's most famous images. 

DON OLSON and RUSSELL DOESCHER teach in the physics department, and MARILYNN OLSON in the English department, at Texas State University (formerly called Southwest Texas State University). The authors have previously written about the skies in three paintings by Vincent van Gogh in articles that have appeared in *Sky & Telescope*: in October 1988, April 2001, and July 2003.

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