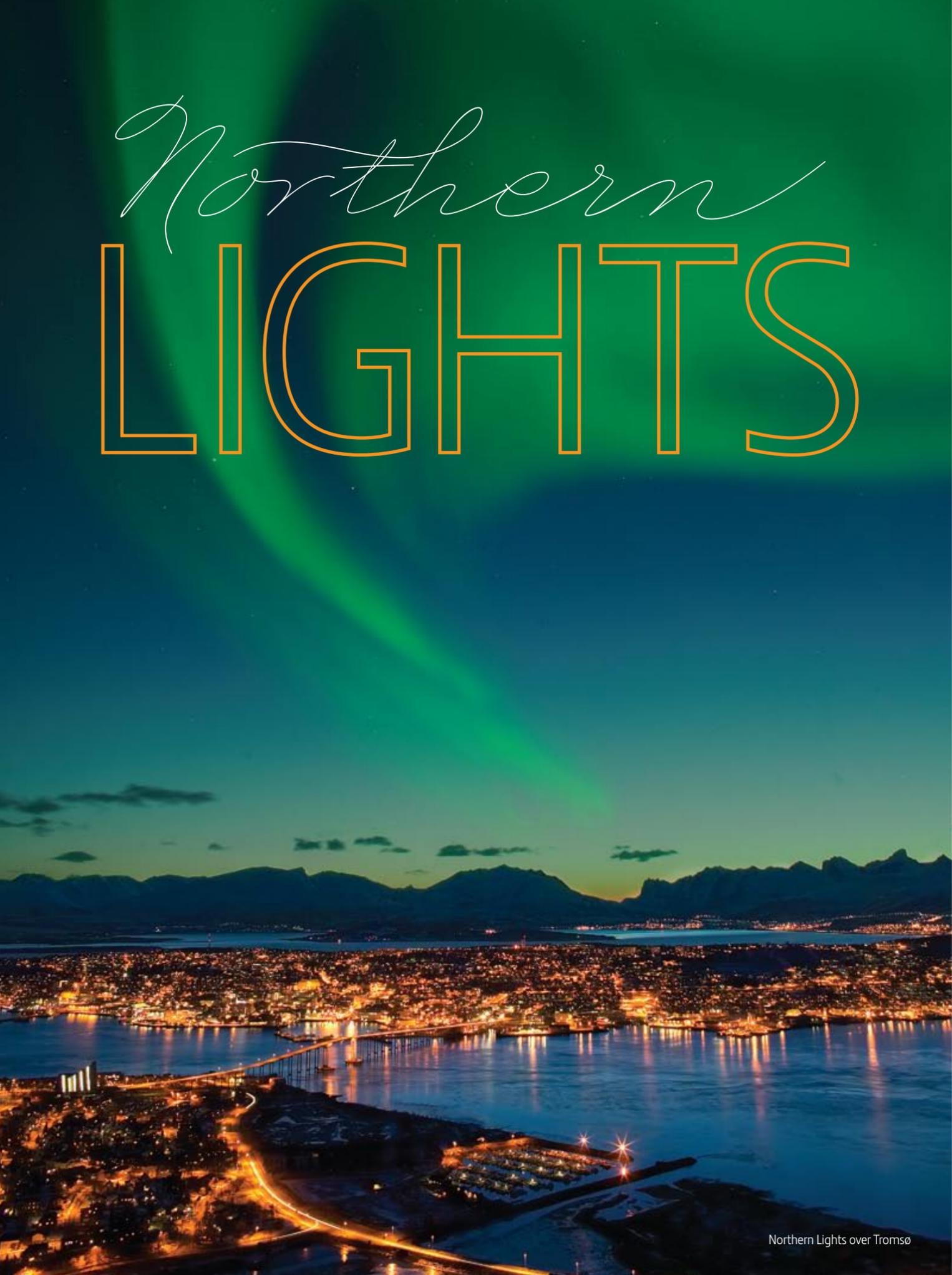


Northern LIGHTS



Northern Lights over Tromsø

NORWAY OFFERS PRIME VIEWING AND UNLIMITED ADVENTURES FOR THOSE SEEKING THE AURORA BOREALIS.

BY CARTER G. WALKER

The earliest explanations for the *aurora borealis*, or Northern Lights, were indeed as fanciful as the shimmering celestial lights themselves. Viking legend tells that the flickering light was cast by the armor of Odin's valkyries. An ancient Swedish word for the phenomenon, *sillblint*, which literally means "herring flash," suggested that the lights were the reflection of giant herring shoals in the ocean. Elsewhere in Sweden some believed that the lights came from frozen swans, flapping their wings in a desperate attempt to free themselves from the icy heavens, or from the glow of Sami torches as they searched for their reindeer. The Finnish, who called the lights *revontulet*, or "fox fires," held that foxes across northern Scandinavia generated the auroras with sparks leaping off their fur as they dashed into the mountains.

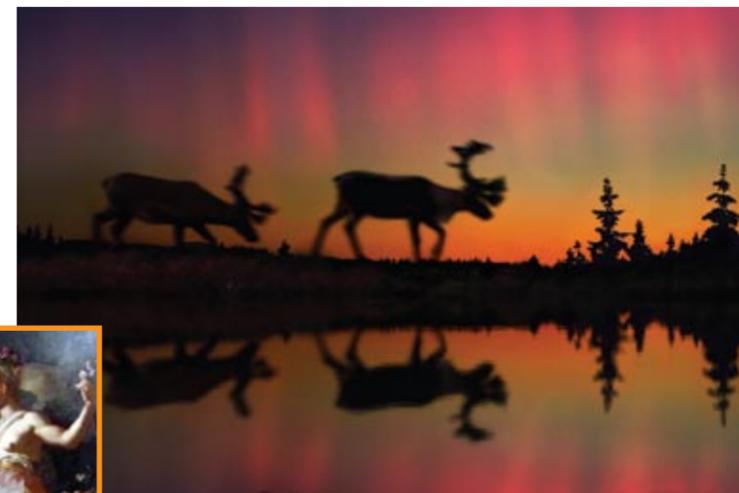
Offering up a slightly more scientific explanation than maiden warriors or magical

animals, the *Kongespeilet* (The King's Mirror), a book written in Norway around 1250, suggested three possible origins: the glow of fires that lined the oceans; sun beams cast up from the sun's resting spot beneath the flat earth; and the absorption of power by glaciers allowing them to shine.

The science behind the scenery

In reality, the *aurora borealis* is a visual display of luminous streams or waves of light

that dance in the northern skies. (The *aurora australis* is a parallel phenomenon in the southern hemisphere.) Though the Northern Lights are active throughout the year, they are most visible during the dark hours of the winter months. They are most commonly seen around the magnetic North Pole in an area known as the auroral zone, or polar oval, which is



(left) The "Kongespeilet," a Norwegian educational text from around 1250, offers three possible origins for the northern lights. (middle) "Aurora taking leave of Tithonus," by Francesco Solimena, 1705, shows the Roman goddess of dawn as she is about to illuminate the night sky. (right) Aurora borealis and reindeer in northern Norway.

PHOTOGRAPHY COURTESY OF (LEFT) KRISTIAN KÅLUND, PALEOGRAFISK ATLAS 1905; (RIGHT) © LOOK DIE BILDAGENTUR DER FOTOGRAFEN GMBH / ALAMY.

10 to 20 degrees from the magnetic pole. Experts agree that because of their location within the polar oval, northern Norway and the archipelago of Svalbard are among the best places in the world to see the phenomena.

Named for the Roman goddess of dawn by Galileo in the early seventeenth century, the aurora is triggered by solar wind, which brings charged particles—known collectively as plasma—from the sun. The magnetic fields above the earth's atmosphere attract the plasma. The lights appear when high-energy ion particles from the sun are trapped by the earth's magnetic field and subsequently collide with atoms and molecules in the earth's ionosphere, some 100 kilometers and higher above the earth's surface. Upon impact, the energy that determined the particles' velocity is released into the atoms and the collisions continue to occur with the particles losing velocity and the atoms absorbing it. When the atoms can no longer absorb energy, they release their stored energy as light. As the particles continue to move down more slowly toward the earth, more collisions result in more emissions of light from the atoms.

Though they occur from collisions on the molecular level, the Northern



Northern lights over Kautokeino, Finnmark

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Lights can put on utterly magical displays for those lucky enough to see them. Most often green and white, they can also be red, violet, blue or a stunning combination of several colors

depending upon the types of molecules at play and the elevation of the collisions. The length of the light displays can stretch 1,000 kilometers or more, while the width can be as narrow as 100 meters. The streams or sheets of light can come in various shapes, depending on one's geographical perspective, and can be still or move in lyrical waves. The most intense period of any given auroral display generally lasts from 10 to 30 minutes.

The solar wind which triggers the aurora is more active during solar storms, which means the Northern Lights can be predicted somewhat thanks to satellites tracking space weather. The most active solar periods generally happen in roughly an 11-year cycle. There's van Nieuwenhoven, co-founder of the Polarlightcenter on the island of Austvågøya in Lofoten, Norway, eagerly points out that the last peak was in 2001, which means that 2012 should be a prime year for Northern Lights viewing. A major solar flare in August of this year, documented on www.polarlightcenter.com, gave van Nieuwenhoven and her partner, Rob Stammes, a reason to be excited.

The couple, originally from Holland, started the Polarlightcenter in 2008 to share their passion for and knowledge of the Northern Lights with guests from all over the world. They host guests at the center, and overnight in a cozy apartment that can accommodate up to five people, from September through March

when the nights are dark enough to see the lights. (In June and July, their guests come to enjoy spectacular views of the midnight sun.) Last year, the couple—who rely on high-tech instruments that Stammes has crafted for predicting the auroras, and plenty of late-night hours scanning the starry skies—witnessed more than 60 displays of Northern Lights. A former teacher and instrument maker, respectively, van Nieuwenhoven and Stammes offer lectures to guests as well as ongoing text message alerts for former guests.

With a PhD in middle polar atmosphere, professor Trond Svenøe agrees that Norway offers some of the best viewing possibilities for the aurora anywhere in the world. In his nine-plus years on Svalbard as a researcher and professor, Svenøe estimates he saw the Northern Lights several hundred times. “What I love about the aurora is that it is alive and active, and that on a cold, dark night we can see this amazing activity,” he says. “As a scientist, I know the background of the phenomena and it just makes it even more fantastic.”

For visitors to enhance their chances of seeing the phenomenon, Svenøe suggests traveling to northern Norway (and away from city lights) between late autumn and early spring, when the longer nights offer better chances to see the lights. Clear, moonless nights offer the most promising odds and naturally the more time one spends looking for the aurora, the better the chances for a viewing. Svenøe explains that magnetic midnight is the best time to start scanning the skies for the lights, which in Finnmark and Troms is between 9 and 10 p.m. For current auroral predictions online during prime viewing season, visit www.polarlightcenter.com or the Kjell Henriksen Observatory on Svalbard at kbo.unis.no.



The Forces of Nature (1872), chromolithograph by Amedee Guillemin. Observed at Bossekop, Norway, in 1839.

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4 must-see AURORAL ADVENTURES: A VIKING RESOURCE GUIDE

Throughout northern Norway, numerous companies have come up with ingenious ways of enjoying the land and seascapes while maximizing the chances of seeing the aurora. *Viking* has rounded up a handful of exciting and inventive organized tours.

1 Farout Adventure in **Tromsø** offers a broad range of adventures that can be specially tailored to any group, including Northern Lights safaris on its beautifully renovated 1950s fishing vessel, dogsledding tours, reindeer sledding tours and snowmobile safaris.
www.farout.no



2 Just outside **Alta**, the Sorrisniva Igloo Hotel—a 32-room masterpiece made entirely of ice, open from January until it melts—offers snowmobile safaris for aurora-seekers on the vast Finnmarksvidda.
www.sorrisniva.no

3 Borton Overseas offers an 8-day arctic adventure from **Kirkenes** that includes a king crab safari, a stay in the Kirkenes Snowhotel, snowshoeing, dogsledding and snowmobiling tours, plus plenty of opportunity to see the lights. Sons of Norway members receive a 5 percent discount.
www.bortonoverseas.com



4 Departing from **Bodø**, the famed Hurtigruten cruises offer a 2- to 12-day “Hunting The Light” voyage that can include numerous sporting adventures plus stops in Tromsø, Honningsvåg and Kirkenes.
www.hurtigruten.com



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