

# Secrets of the Goddess of the Dawn

—

Aurora Myth & Legend, with Melissa F. Kaelin

"The more of us that feel  
the universe, the better off  
we will be in the world."

— Neil deGrasse Tyson

# Under One Sky

Let's get acquainted!

- Introduce yourself
  - Where are you from?
  - Have you seen the Aurora?
  - Tell us how you first took an interest in or first experienced the Northern Lights!
-



## Meet Melissa

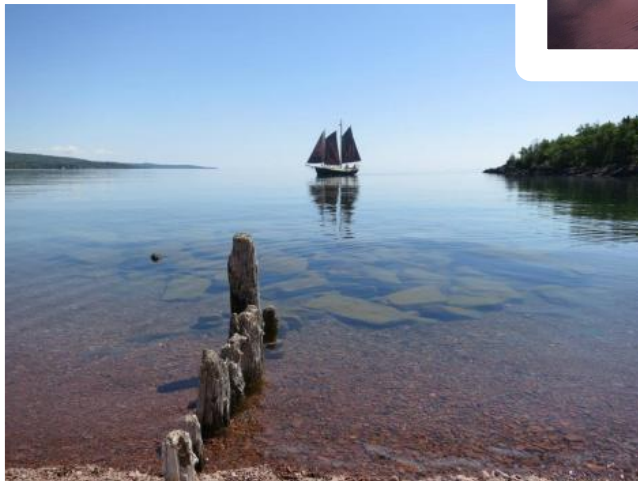
Journalist, Artist & Storyteller  
KaelinArt.com

---

- Originally from Ohio, 11 years in Minnesota, moved to Michigan last year
- Admin for Aurora Chasers since 2013 — From GLAH to Aurora & Night Sky Adventures
- Work in journalism & nonfiction, write poetry & fiction on the side
- Publications: Minnesota Monthly, City Pages, Scene in the Metro Magazine, Michigan State University
- What Aurora means to me, April 24, 2012

# My Photography





# My Painting



“Vibrant Evening”  
Acrylic, 12x24

“Sweet Raspberry  
Sunset”  
Acrylic, 12x24

[KaelinArt.com](http://KaelinArt.com)



# My Writing





## Winter Wonders: Minnesota's Natural Beauty in Photos

*From sun dogs to sea smoke, these photographs of Minnesota's natural winter phenomena will leave you breathless*



ARTS | DRESSING ROOM

Sparks Ignite the Sky Under Light Painter Jamie Rabold's Inventive Techniques

Melissa F. Kaelin | 9:08 am | (3) Comments

# Publications

- Interviewed for Star Tribune, Twin Cities Public Television, Lake Superior News
- *MSU Today*, Feature Articles on Communication Science Research
- *Minnesota Monthly*, Winter Wonders, Rare Phenomena Photojournalism, 2013
- *City Pages*, Photographer & Artist Features, 2013
- *Still Point Arts Quarterly*, Short Story on Milky Way, Winter 2018
- *The Aurorean*, Poem, Spring 2018
- *Hope in the Hoarfrost*, Poetry Collection on Amazon, 2016
- *We Had To Go On Living*, Cover Artist, Red Bird Chapbooks, 2013
- Capture Minnesota, Photo of the Day, 2013

**In Progress:** Novels featuring the mythology of the Aurora Borealis & the Milky Way

# A STILL LIFE WATERCOLOR

We are verses out of rhythm, couplets out of rhyme...

[home](#) / [blog](#) / [about](#) / [portfolio](#) / [contact](#)

## POPULAR POSTS

- People with Passion
- 'Rise in Perfect Light'
- Only As Deep As Our Love
- Year in Review 2017

## RECENT POSTS

- The Poetry of Opening
- The Danger of Open Doors
- A Love Affair With  
Unlucky Numbers

## OFFICIAL WEBSITE

[KaelinArt.com](#)

FOLLOW BLOG VIA EMAIL



# Blog & Creative Nonfiction



## RAISING THE PHOENIX

November 4, 2017



[mfkaelin.wordpress.com](http://mfkaelin.wordpress.com)

## The Road to Whiteface Mountain



The Northern Lights dance above white-capped mountains in Iceland. Although my story takes place in the U.S., I spent the day writing about a beautiful mountain range.

## Giving Birth to Galaxies



The Milky Way stretches over Lake Hawea near Isthmus Peak in New Zealand. Gazing into our galaxy inspired me to begin writing my second novel.

“The rare phenomenon rendered his inquiring mind alert, his body youthful. He even believed, beneath the energy of the electromagnetic waves, his heart could be rendered whole.”

— *Aurora Novel Excerpt*

# Goddess of the Dawn



# Did you know?

## Tips for Aurora Chasing

- Peak Aurora season is September through April
  - Aurora are less frequent, but very active during summer
  - In general, the best time to see Aurora is 2 hours before and after “magnetic midnight”
  - Aurora often begins as a small arc that glows very low on the horizon
-

# Did you know?

## Tips for Aurora Chasing

- Aurora is often not visible to the naked eye
  - Weak aurora appear as translucent white clouds, especially under light pollution
  - Strong aurora moves in waves! It's often active for about an hour, quiet for a few hours, then active for another hour
-



Copyright Jamey Penney-Ritter  
[www.bemusedphoto.com](http://www.bemusedphoto.com)

*Captured right here in Washburn, Wisconsin! Aug. 30, 2019*

# Myth & Legend



Meet the Goddess of the Dawn

# Goddess Aurora

Ceiling fresco by Guido Reni, 1613-14, in the Casino Rospigliosi in Rome.



# The Good



# Goddess of the Dawn

In Greco-Roman mythology, Aurora is the goddess of the Dawn. She is the sister of Helios, the sun, and Seline, the moon, and she races the sun god's chariot into the sky. In Greek, she is called Eos.



***Greetings. I am Aurora, Goddess of the Dawn. My name is related to the Latin term "aurum", meaning gold. Each morning, I awake wearing my purple cloak, bringing the good news of the arrival of the sun. I have two siblings - my brother is Sol (the sun) and my sister is Luna (the moon). I have had multiple mortal lovers. One was the prince of Troy: Tithonus. I begged Zeus to make him immortal so I could be with him for all eternity, and my wish was granted. Being forgetful as I often am, I forgot to ask for eternal youth, therefore leaving him to age for all of eternity. I knew I could not deal with the baggage of an older man while I was still young, so I turned him into a grasshopper.***

Source: <http://english1workshop.blogspot.com/2011/02/aurora-goddess-of-dawn.html>

# Revontulet “Fox Fires”

[Watch Video on Visit Finland](#)



Watch the video: [Visit Finland Website](#)

Our Icelandic ancestors associated the lights with childbirth.

Aurora would relieve the pain of delivery as long as the expectant mom didn't look at the Aurora during childbirth, or the child would be born cross-eyed.

In Washington, the Makah Indians thought the lights were fires in the north created by a tribe of dwarves who used it to boil whale blubber.

Cooking was also central to the Mandan people in North Dakota. They said the lights were fires over which warriors boiled their enemies in huge cooking pots.

“The dead suffer no hardship,  
wherever they may go, but most  
prefer nevertheless to dwell in the  
Land of Day, where the pleasures  
appear to be without limit.”

— Rasmussen, 1929

# The Bad



“They fight battles in the air as men do on earth. They may be heard and seen on clear, frosty nights, advancing and retreating, retreating and advancing against one another...”

— Mackenzie, 1935

Early Chinese legends associated with dragons may have originated in the Northern Lights.

Some believe the lights were viewed as a celestial battle between good and evil dragons who breathed fire across the firmament.

Dying in battle was an honor in Norse culture.

Aurora was believed to be “Bifrost Bridge”, a glowing and pulsating arch which led those fallen in battle to the warriors final resting place in Valhalla.

# The Ugly

—

The anger of the gods.

War in Europe.

Spirits coming to steal  
little children.

Out at Night

—

“If one happens to be out alone at night when the aurora borealis is visible, and hears this whistling sound, one has only to whistle in return and the lights will come nearer, out of curiosity.”

— Rasmussen, 1929

# A Pulse in History



What discoveries  
have scientists  
made recently?

# New Discoveries

2008: Scientists determine what causes sub storms

2012: Scientists find origin of energized particles that create Aurora in the magnetotail

2016: Scientists find evidence Aurora makes noise

2016: Footage of sub-auroral arc STEVE recorded

2016: DSCOVER satellite launched to monitor sun

2018: NASA launches Parker Solar Probe to the sun

2020: ESA launches the Solar Orbiter to the sun

# A Cultural Lens



How did different  
cultures explain  
the mystery of  
Aurora?

# Lost in Translation

## Sights people witnessed before their very eyes...

- Burning red skies at night
- The Auroral Arc on the horizon
- Tiny blips of Aurora in the sky
- Pillars stretching down from the Arctic Circle

## What they guessed Aurora Borealis actually were...

- War or deceased warriors
- The edge of the Earth
- Foxes or other animals
- Torches leading loved ones to paradise



# Meaning Across Cultures

Finland — Fur of arctic fire foxes

Japan — Fertility, prosperity

Maori, New Zealand — Fires lit by ancestors

Aboriginal Tribes — Anger of the Great Man

China — Fire-breathing dragons

Norway — Old maids dancing

Finnish Lapps — Dead in battle

Russian Lapps — Spirits of the murdered

Sweden — Bountiful fishing

Scotland — Merry dancers

# Meaning Across Cultures

Scotland — “Slaugh,” forever at war

Norse Mythology — Female warriors

Vikings — Fire that burns at the end of the Earth

Bavaria — Warriors in battle

Medieval Europe — Omen of war

Ancient Greece — Chariot of sister of Helios & Seline

Greenland — Souls in Paradise

Makah, Pacific Northwest — Blubber boiling fires

# Secrets of the Goddess



# Secret 1

Aurora is an elusive creature.  
She does not like to appear  
in news headlines!

# Debunked!

That's because even scientists have a hard time predicting impacts, so for journalists who are new to the subject, it's easy to get it wrong.

# But wait...

Those who stand in awe

- Sometimes, the reports just get the facts wrong
  - Other times, the conditions to create Aurora just change
  - When Aurora forecasts are announced in groups that can appreciate the beauty, it seems to work out
  - Remember, we're in Solar Minimum, the low of the 11-year cycle!
-

# Secret 2

Aurora crackles, sizzles and pops!

# Debunked!

In some circles, the jury is still out. This legend has existed for centuries. However, there is growing evidence this is real.

# But wait...

In extreme climates

- Cracking ice on the lake
  - Sound of the leaves in the wind
  - Tiptoe of animal feet nearby
  - Effect of the energy in the atmosphere on the trunks of the trees or in telephone lines
-

# Secret 3

You can feel the *Aurora Borealis*,  
and the radiation it creates.

# Debunked!

While we're always exposed to the sun's radiation to some degree, a geomagnetic storm is not the same as a radiation storm.

# Secret 4

Once you view the Aurora, it will always be a part of you.

Debunked!

No. Seriously.

Become an Aurora Chaser!

We call it “Green Crack.” 🤔

—

# Origin Stories



An excerpt from *The Labrador Eskimo* by explorer Ernest W. Hawkes:

*“The ends of the land and sea are bounded by an immense abyss, over which a narrow and dangerous pathway leads to the heavenly regions. The sky is a great dome of hard material arched over the Earth. There is a hole in it through which the spirits pass to the true heavens. Only the spirits of those who have died a voluntary or violent death, and the Raven, have been over this pathway. The spirits who live there light torches to guide the feet of new arrivals. This is the light of the aurora. They can be seen there feasting and playing football with a walrus skull.*

*The whistling crackling noise which sometimes accompanies the aurora is the voices of these spirits trying to communicate with the people of the Earth. They should always be answered in a whispering voice. Youths dance to the aurora. The heavenly spirits are called selamiut, “sky-dwellers,” those who live in the sky.”*

# Good Luck on the Aurora Chasing Trail!

This photo was taken by  
local Jamey  
Penney-Ritter on  
the Coal Dock on  
Aug. 30, 2019.

Here's hoping there  
are dances in the sky  
tonight!



Copyright Jamey Penney-Ritter  
[www.bemusedphoto.com](http://www.bemusedphoto.com)

# Sources

How Sun Watchers Stopped WWII in 1967:

<https://www.nationalgeographic.com/news/2016/08/solar-storm-1967-space-weather-cold-war-science/>

NASA Sets Out to ‘Touch the Sun’ — Here’s How:

<https://www.nationalgeographic.com/science/2018/08/news-parker-solar-probe-launch-sun-nasa-space/>

Auroras Make Weird Noises and Now We Know Why:

[http://news.nationalgeographic.com/2016/06/auroras-sounds-noises-explained-earth-space-astronomy/?fbclid=IwAR2IWLvX8QCrXKZLFocgXONtIBggeo8\\_zB2ZLxcvHA5Q8H4GIxX\\_9LC3loQ](http://news.nationalgeographic.com/2016/06/auroras-sounds-noises-explained-earth-space-astronomy/?fbclid=IwAR2IWLvX8QCrXKZLFocgXONtIBggeo8_zB2ZLxcvHA5Q8H4GIxX_9LC3loQ)

# Sources

<https://honestlywtf.com/style/shopping/magnetic-midnight/>

<https://www.nasa.gov/feature/goddard/2019/streaks-in-aurora-found-to-map-features-in-earth-s-radiation-environment>

<https://www.sciencedaily.com/releases/2008/07/080724150341.htm>

<https://advances.sciencemag.org/content/4/3/eaag0030>

<https://www.space.com/14679-northern-lights-mystery-earth-magnetosphere.html>

<https://www.interlochenpublicradio.org/post/colors-dawn-dance-north-wind-week-storytellers-night-sky>

<https://www.theaurorazone.com/about-the-aurora/aurora-legends>

# Outtakes: More Details



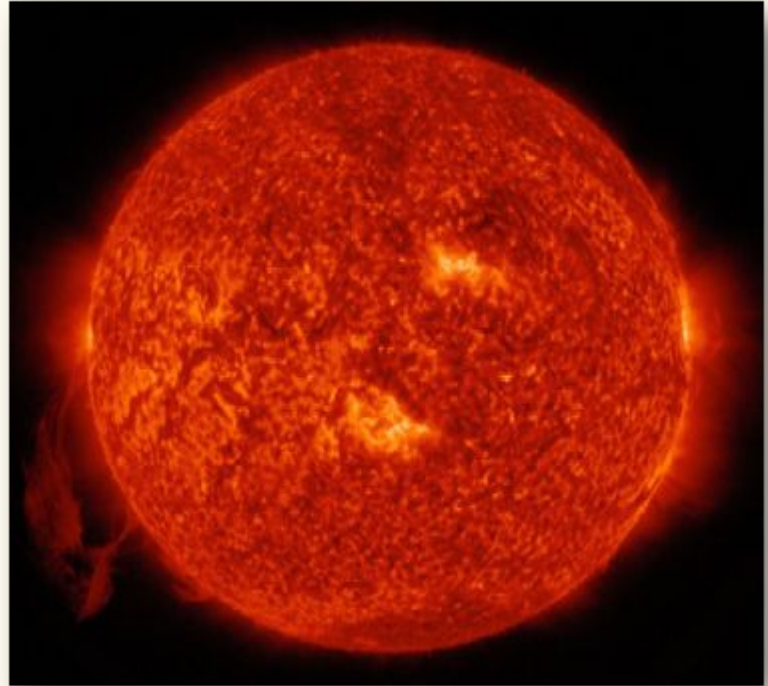
# A Scientific Look



What creates the  
Aurora Borealis  
and the Aurora  
Australis?

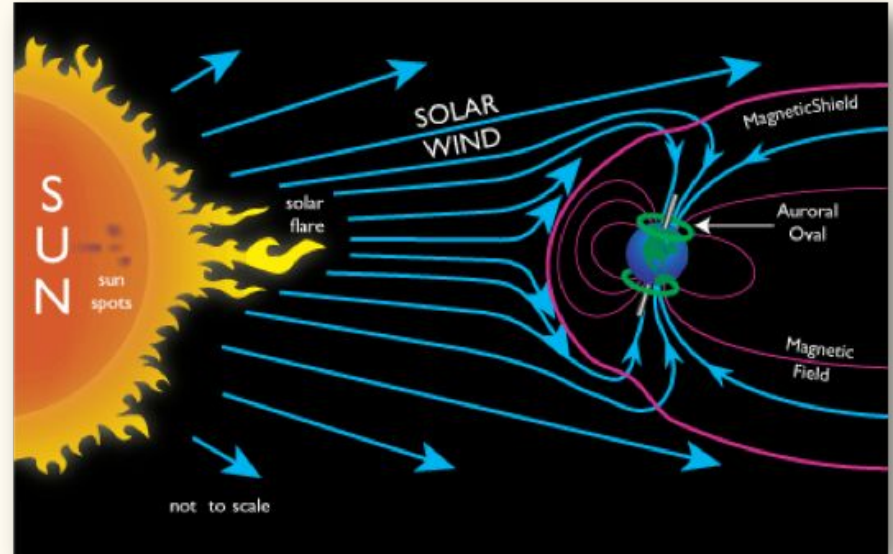
# Originating on the Surface of the Sun

Now we know Aurora is solar matter or plasma that originates from sun spots, solar flares, filaments and coronal holes on the sun's surface.



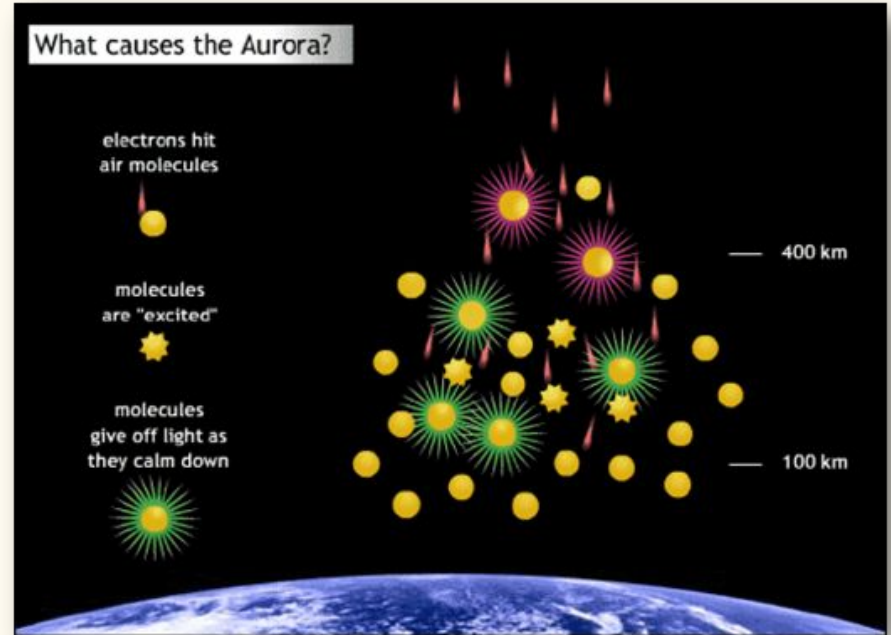
# Monitoring Space Weather & Solar Wind

Synonymous with solar wind, the gusts of solar matter are hurtled through outer space toward the Earth, entering the atmosphere at the poles.



# #TFW Charged Particles Create Light

Particles in the solar wind interact with gaseous elements in the atmosphere, emitting light when they react with nitrogen, oxygen and hydrogen.



# Observing the Impact in Earth's Atmosphere

The electromagnetic surge from the solar wind impacts satellite performance, GPS devices, radio transmissions and electrical grids. But it also creates Aurora Borealis, pictured here, and Aurora Australis.

