



**A little science...A touch of fiction...A lot of adventure...**

## News from the Den

Welcome to the inaugural newsletter for CA Farlow. She's an author and my mom. I suppose an introduction is appropriate here. I'm Peet. I'm an American shorthair gray tabby cat. Yes, that's right, I'm a cat, thank you very much. I've been my mom's companion for that last 19.5 years. She's put me in charge of our new monthly newsletter because she is busy writing our new book Quantum Time, the fourth book in our Nexus Series. Things are progressing at a pace on that one. The other exciting news is The Paris Contagion is out for review to six mainstream reviewers and the audio book is complete. Hats off to Hillary Huber our amazing narrator for another stellar job! That's the good news. The not so good news is these are pre-publication review sites and we must wait the requisite time for them to complete a review. (If they do, fingers and paws crossed.) Therefore, the release of The Paris Contagion is delayed. This geopolitical thriller is set in the near future, with new characters and a twist and turn plot. I know you can't wait, neither can we. That's the current news from the Den, more next month.

Let us know what you think of our newsletter and our website [cafarlow.com](http://cafarlow.com) by dropping a note to [caauthor@earthlink.net](mailto:caauthor@earthlink.net).

Thank you for subscribing. Peet

## Latest and Greatest - Science News

We're fascinated by the biggest things in our universe and the smallest. And the attempts to tie the two universes together. Some of these ideas, hypotheses and theories are the basis for the science Lauren uses in the three books of the Nexus Series.

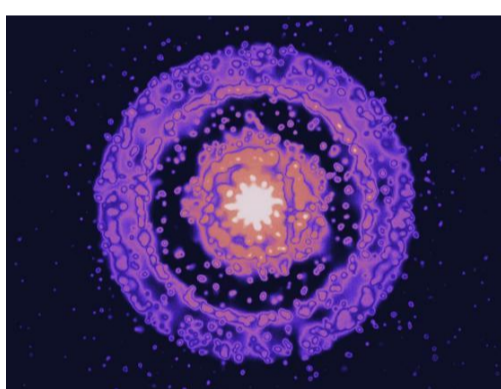
*CERN and The Large Hadron Collider*—after a shutdown for maintenance and upgrades, the LHC was restarted and is now discovering new sub-atomic particles which are building blocks in the theoretical Standard model of Quantum Mechanics (see the website Science section). The scientists and engineers at CERN are hunting for new particles which may lead to an understanding of the fundamental principles of our universe. In 2012, they discovered the Higgs Boson, a fundamental subatomic particle, which is key to validating the Standard Model. It is the particle responsible for producing mass and forces in other particles. The LHC is the largest and most powerful experimental machine ever built. This is another example of theory coming before experimental discovery. Next experiments will look for the W Boson and dark matter, stay tuned. Currently, work at CERN is delayed due to this winter's pending energy crisis in Europe.

*James Webb Space Telescope*—images from this space telescope continue to wow astronomers and physicists. The Webb has now looked outward, searching for 'old light' and inward on our solar system, using new optics to get a different view of the planets. Photos are in the Science section of the website.

*The Black Death of the Dark Ages and Autoimmune Disease Today*—a study of the DNA of people who died 700 years ago reveals an astonishing find. The Black Death was the deadliest pandemic in human history. The bacterium *Yersinia pestis*, killed 30 to 50% of Europe's population in the mid-1300's. However, a single-letter genetic mutation on one gene—ERAP2—increased a person's immunity to the disease by 50%. This mutation is noted in 45% of people prior to the plague and presence of the mutation increased to 70% of the population after the plague. This is among the fastest example of natural selection ever documented in humans. Today, more than 45% of Europeans still carry this mutation. However, there is a downside to having this genetic mutation, there is an increased risk of developing autoimmune diseases—Crohn's and rheumatoid arthritis.

## Photo of the Month - Meet the BOAT

This is an image of the brightest gamma-ray burst of all time - it formed from the death of a massive star and the black hole or neutron star it left behind. The star is 2.4 billion light years away. The gamma-rays were ejected from the stellar poles. Photons from this burst had more energy than particles produced by the Large Hadron Collider. Its possible they were so powerful the photons morphed into axions—the basic particle of Dark Matter. The stream of particles overwhelmed the Fermi-Gamma ray Space Telescope and lasted more than ten minutes..



## In Memoriam - Gregor Mendel

The 200th anniversary of Mendel's birth was celebrated on 22 July 2022. Although Mendel had no knowledge of genes, chromosomes or genomes, his work with pea plants and their variations laid the foundation for modern genetics. He coined the terms: dominant and recessive which are used today. His work and methodologies of careful and patient data collection should be considered in today's hyper-competitive environment to be first.

## Historical Foundations - Hedy Lamarr

During her lifetime, Ms. Lamarr was one of the greatest film actress's of Hollywood's Golden Era and dubbed the most-beautiful woman of her time. But she was much more than an actress. Although she lacked formal training, during World War II she read about radio-guided torpedoes. She wondered if an enemy might be able to jam such a torpedo's guidance system and set it off course. She had an idea of creating spectrum frequency-hopping to fool the enemy's systems. Working with several others, they developed the idea. Though the US Navy did not employ her ideas, the principles of her work form the basis for today's Bluetooth, GPS and WiFi systems of today.

## Book of the Month - *Einstein's Unfinished Symphony: The Story of a Gamble, Two Black Holes, and a New Age of Astronomy*, Marcia Bartusiak

In February 2016, astronomers announced the discovery of gravitational waves, the last remaining prediction of Einstein's General Theory of Relativity. Gravitational waves are produced by the collision of gigantic bodies—neutron stars and black holes—and from supernovae. The waves are ripples in the fabric of spacetime, like the radiating ripples produced by a stone thrown into a pond. This book details the trials and tribulations as scientists attempt to build the most accurate measuring devices known to humankind. The result of their success is the LIGO observatories in Washington and Louisiana. I was awed by the scientific determination and rooted for the scientists as they overcame one hurdle after another.

Since LIGO's first discovery of gravitational waves, we now have listened to a multitude of waves—our universe sings with these songs as the waves flow across the universe. Waves which may allow us to hear the sounds of the Big Bang. The intragalactic ships in A Quantum Singularity utilize these gravitational waves to travel at faster-than-light speeds.

## Minutiae

We'll keep you up-to-date on the status of Quantum Time and the review process for The Paris Contagion.

Thanks for subscribing to our newsletter. Hope you enjoyed this first monthly installment. We'll carry on and have more fun and amazing news in December. In the interim, Happy Thanksgiving, if you live in the US. Be well. Peet and CA



keep being curious

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