A little science…A touch of fiction…A lot of adventure…

News from the Den

I attended the Golden Crown Literary Society meeting in Denver and had an opportunity to read a selection from *The Paris Contagion*, sit on a sci-fi panel discussion with five other authors and participate in a book signing event. Take a listen (you'll be prompted to download an MP4 file). My publisher sold out of all my hard copy books they'd brought with them! It was a total blast to meet so many authors and interact with readers. Lots of positive feedback. I've shared a photo below of the panel - gotta love a sci-fi event named 'Why Warp Engines Go Boom in the Night'.

Latest and Greatest - Science News

This month it's all about L2 - or second Lagrange point. Earth has five Lagrange points. The first three were discovered in 1750 by Swiss mathematician Leonhard Euler. A Lagrange point is a geographic location of static equilibrium for small-mass objects (satellites) under the gravitational influence of two massive bodies (the sun and Earth). Because of this gravitational equilibrium, satellites require little navigational input to remain at this fixed point.

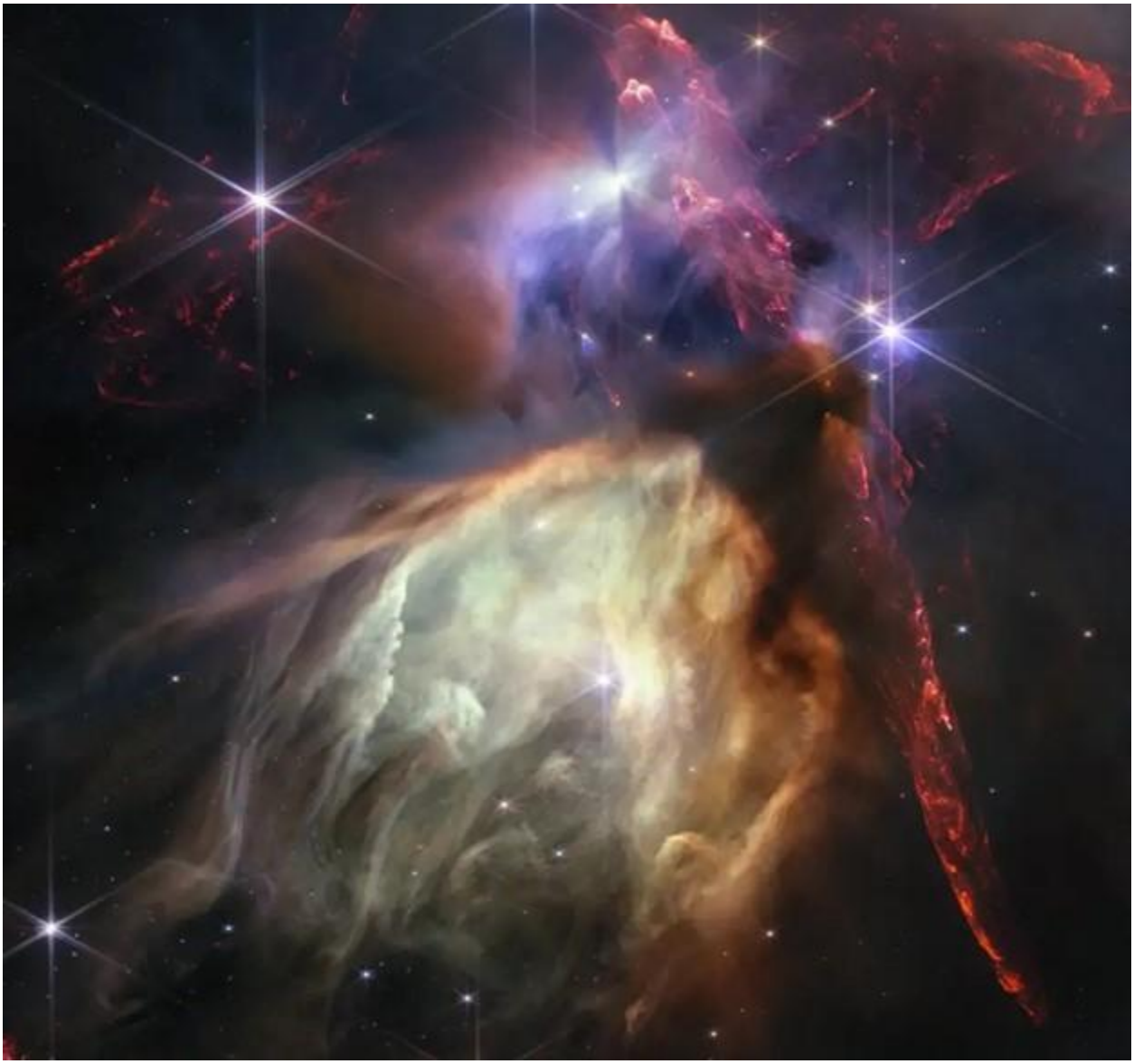
That spot in space is where the James Webb Space Telescope set up orbit July 2022, about 1.5 million kilometers from Earth. I don't remember a scientific achievement which has returned so much capital in so little time. A feat of engineering marvel with no less than 356 critical points of failure identified before its launch, the telescope has out performed all anticipated expectations. Different then the Hubble space telescope which images visible light, the Webb looks at near and mid infrared light with cameras and instruments. JWST has imaged light from the most distant galaxies, looking 'back' to the earliest time of our universe after the Big Bang in its 'deep field' images. It imaged the auroras of Jupiter, it looked through the dust of nebulae and imaged star nurseries, its searching for the origin of supermassive blackholes (the anchors of most galaxies), its found and analyzed exo-planets and is determining if there is water in their atmospheres and other organic molecules needed for life as we know it, and it looked at cepheid stars (the pulsing stars used to measure how fast the universe if expanding). Every day is a new image and discovery. But, what I've learned about JWST is that you can't predict what it will discover next. Its original mission was slated for 10 years, but due to the equilibrium at L2, it has fuel left for another 10 years! That's 20 years of science, thanks to L2. Read more.

Next month, JWST will be joined at L2 by another deep space telescope. The Euclid space telescope launched 1 July 2023 from Cape Canaveral, by the European Space Agency. Its mission is two-fold: it will search the universe with instruments utilizing visible and near infrared light, surveying 1 billion (say that's with a 'b') galaxies (that's about one third of the sky) and attempt to solve the greatest cosmology mystery. That mystery is the value of the cosmological constant—w. Cosmologists are hoping (fingers crossed) that it is not -1.

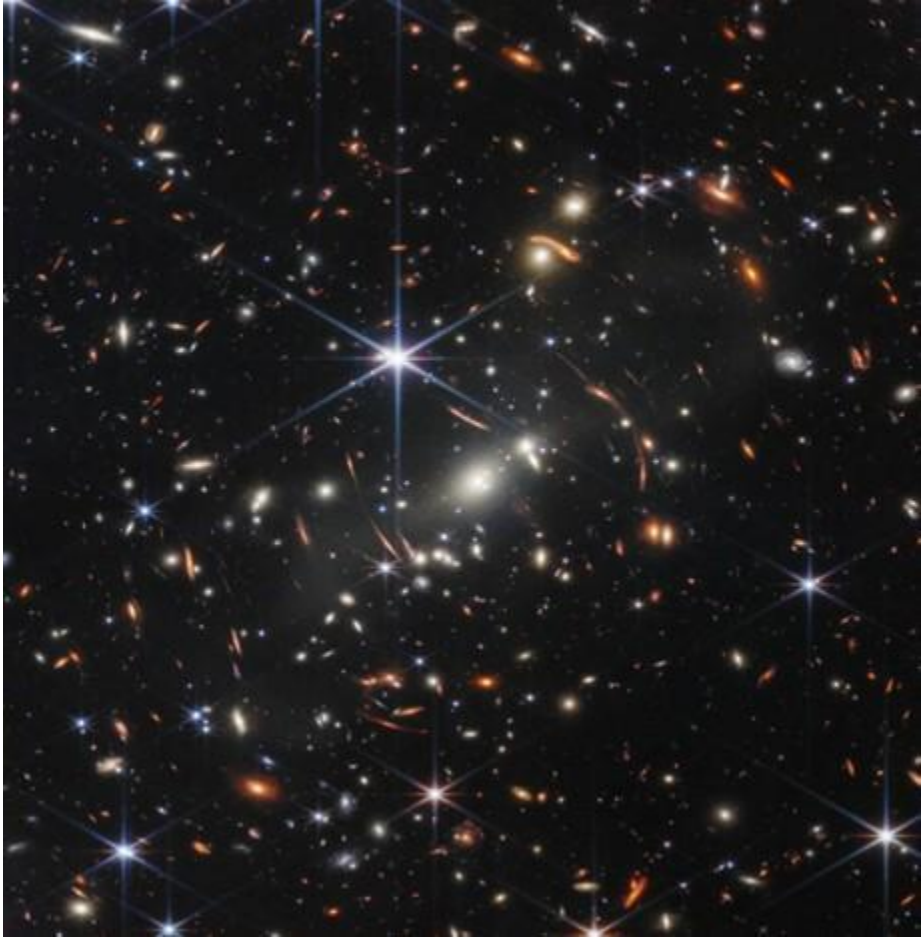
w describes the antigravitational effect of dark energy on the universe. If w is -1, then again, Albert Einstein was correct in creating this 'fudge factor' and applying this constant to his theory of gravity, a part of his General

Theory of Relativity. His thoughts: as our universe expands, the ever-increasing empty space created should have a ‘springiness’. This allows the overall density of the empty space to remain constant and not decrease with volume creation. w does not explain where dark energy comes from or why it has a negative value. Maybe like antimatter - if you have matter you must have its opposite. If you have energy you must have negative dark energy to create equilibrium. After all, the 2nd law of thermodynamics must be preserved. Read more.

Photos of the Month - It's all about the Webb



The Rho Ophiuchi cloud complex, a star nursery exists in the red tail on the right (Klaus Pontoppisdan, STScI).



Deep field image of galaxy cluster SMACS 0723. The smallest, reddest dots are the farthest and therefore oldest galaxies.

For more amazing JWST images go to Webb Telescope.

In Memoriam - Titan

Shahzada Dawood and Suleman Dawood died on 18 June in the implosion accident aboard the Titan submersible. Shahzada was a philanthropist and donated to science through the Dawood Foundation in Pakistan. The Foundation established a technical university, a STEM school for girls and the first science museum in the country.

Historical Foundations - Telescopes

The first telescope consisted of a simple tube with a concave and convex lens system. This instrument magnified the field of view three to four times. The national government of the Netherlands reviewed a patent application in October 1608 for an instrument that aided ‘seeing faraway things as though nearby’. These early devices were created by spectacle-makers and used primarily to make Earth observations. Galileo was one of the first to turn the instrument skyward and observe the heavens.

Movie of the Month - Oppenheimer

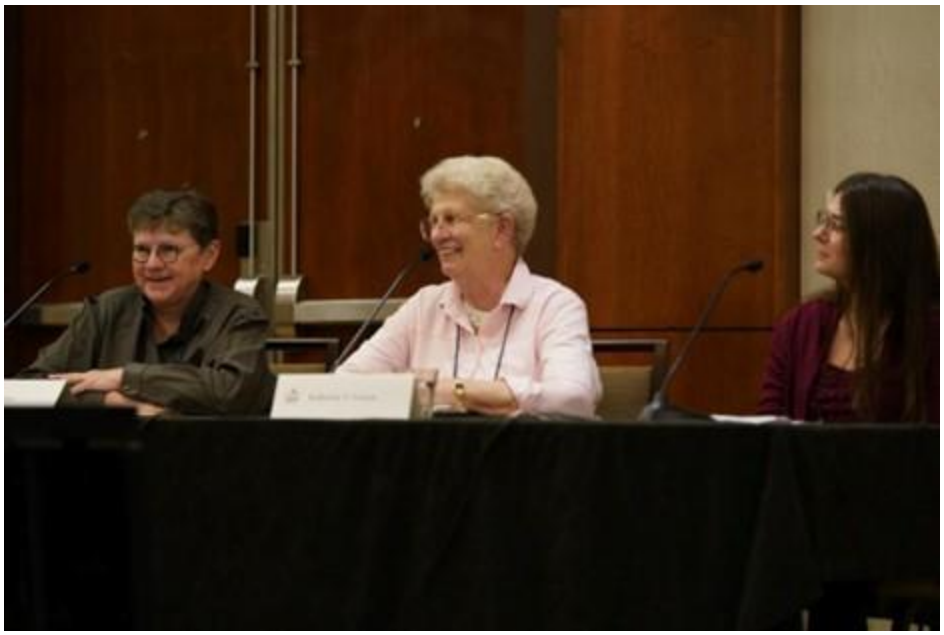
No its not hot pink and it doesn’t have a Ken-doll love interest but if one is interested in World War II historical information, then Oppenheimer is the movie for you. Although, J. Robert Oppenheimer was the ‘father’ of the atomic bomb, he was also a preeminent early cosmologist and worked on black-holes. Having spent six months

at Los Alamos National Labs completing work for my Masters degree, I look forward to seeing this movie and learning about the man behind the myth.

Book of the Month - *American Prometheus*, the Triumph and Tragedy of J. Robert Oppenheimer

As a compliment to the movie of the month, *American Prometheus* is a must read. It is the foundation Christopher Nolan used to create his movie. Don't be put off by the length (788 pages including footnotes), its a marvel of research and persistence. Martin J. Sherwin began the book in 1980 and it took until 2005 to complete, accomplished only after Kai Bird joined the project. It received the Pulitzer Prize for biographies in 2006. American Prometheus is available on Amazon.

Minutiae



SciFi Panel

keep being curious

CA Farlow | ©Copyright 2023 | All Rights Reserved

Changed your mind? You can unsubscribe at any time.

Manage your preferences | Opt Out using TrueRemove™
Got this as a forward? Sign up to receive our future emails.
View this email online.

10902 Snow Cloud Trail | Littleton, CO 80125 US

This email was sent to .
To continue receiving our emails, add us to your address book.

Subscribe to our email list.