

OPUNTIA  
570



# Solar Eclipse 2024

Opuntia is published by Dale Speirs, Calgary, Alberta. It is posted on [www.efanzines.com](http://www.efanzines.com) and [www.fanac.org](http://www.fanac.org). My e-mail address is: [opuntia57@hotmail.com](mailto:opuntia57@hotmail.com) When sending me an emailed letter of comment, please include your name and town in the message.

## SPRING'S HARBINGERS

2024-04-09

photos by Dale Speirs

As I strolled out one day, I spied a ground squirrel, hence the cover photo. This wee beastie was in Weaselhead Park not far from where I live. Instead of snow we now expect rain showers, and the grass has begun to green. There are no rats in Alberta but Richardson's ground squirrels abound.



# WHEN THE MOON IS IN THE SEVENTH HOUSE

by Dale Speirs



April 8 was the big day for the solar eclipse. Totality was in eastern North America but Alberta had 20% occultation. For once Calgary had bright clear skies during an astronomical event. The bad news was that the occultation was too small so I wasn't able to get a decent photograph.

Canada Post issued a stamp for the eclipse. The design shows a transect angling diagonally across totality from Niagara Falls, Ontario, to Bonavista, Newfoundland. The landscape along the bottom of the stamp melds Niagara Falls with the rocky coast of Newfoundland.



I am active in the Calgary Philatelic Society and edit its monthly publication CALGARY PHILATELIST. By incredible good fortune the regular mail-out day for the April issue was on Eclipse Day, April 8.

Using the eclipse stamp, I mailed the issue from the Sunridge retail postal outlet at the Shoppers Drug Mart in Sunridge Mall, up in northeast Calgary. I added a rubber-stamp marking so that future collectors would understand the significance of the date.

CPS  
Box 1478  
Calgary, Alberta  
Canada T2P 2L6

Mailed on Eclipse Day

Sunridge RPO  
99945  
2024-04-08  
Calgary, Alberta  
T1Y 5T0

Sunridge RPO  
99945  
2024-04-08  
Calgary, Alberta  
T1Y 5T0



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# CANSTRUCTION CALGARY: PART 6

photos by Dale Speirs

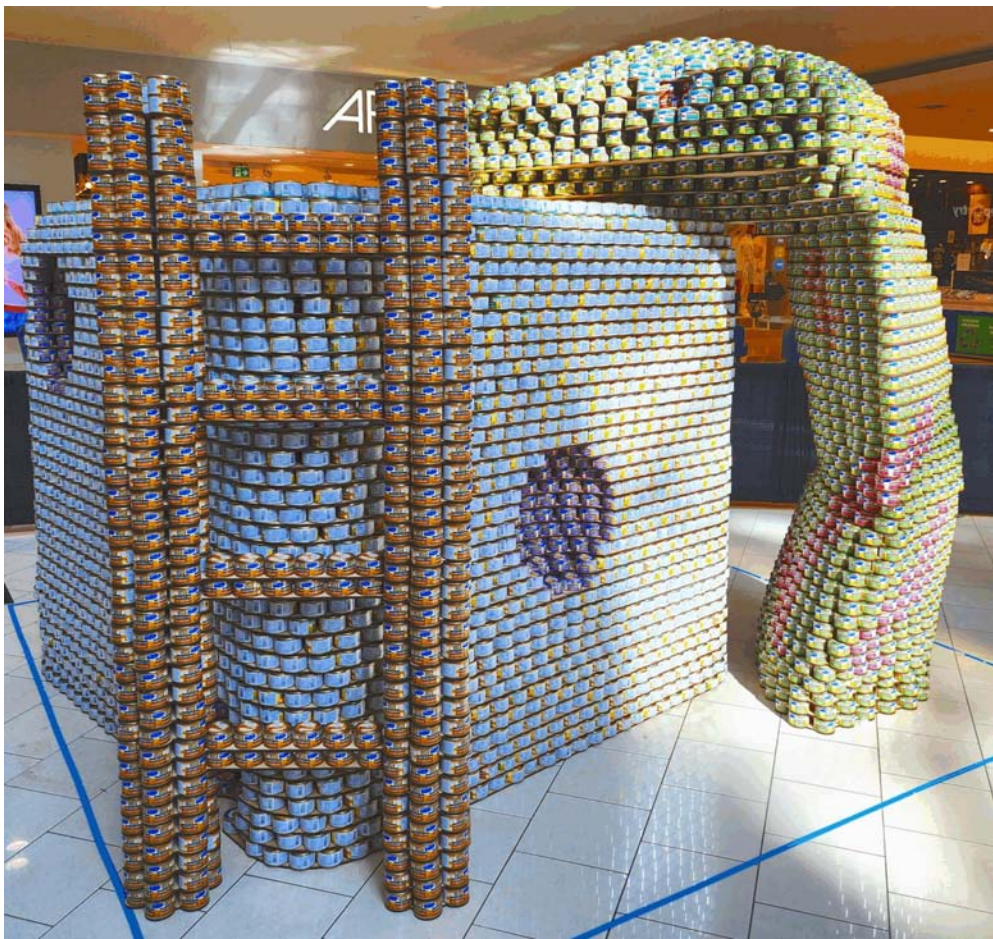
[Parts 1 to 5 appeared in OPUNTIA #409, 439, 469, 546, and 559.]

As in past years, the Southcentre Mall down in Deep South Calgary hosted the annual Canstruction event in support of the Calgary Food Bank. Various companies sponsor artists who build structures out of canned food.

After the event, the cans are donated to the Food Bank. The theme for 2024 was old board and video games.

The view below is looking down on the display from the mezzanine.





Snakes and ladders.

At bottom right is a close-up of the snake's eye.

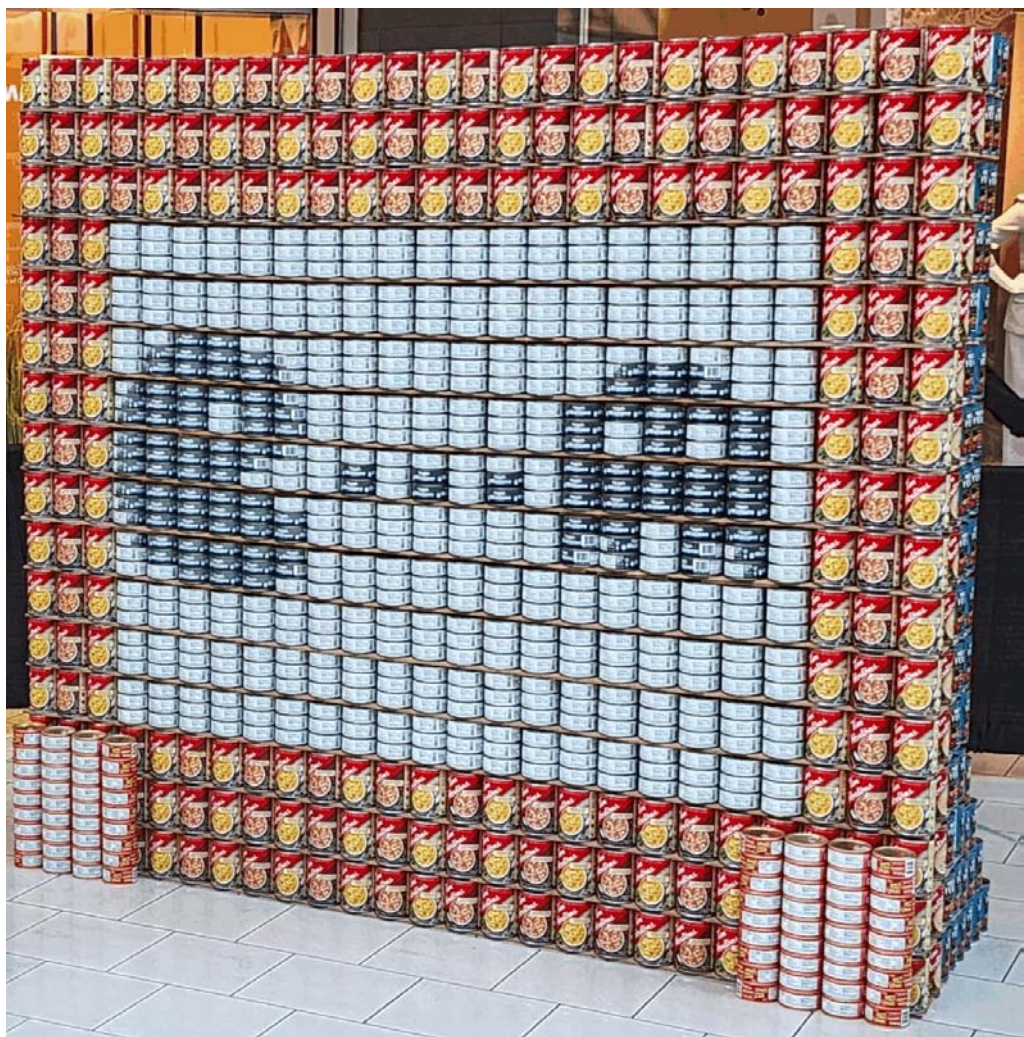
Anyone remember the board version of Battleship?



We all remember Pac Man.



I wonder what happened to my Etch-A-Sketch? Mom probably gave it to one of my young cousins after I went off to university.



I never did play Donkey Kong.



## **BWAH HA! HA!: PART 19**

by Dale Speirs

[Parts 1 to 18 appeared in OPUNTIA's #371, 372, 378, 388, 391, 393, 397, 409, 422, 427, 434, 451, 475, 491, 502, 522, 543, and 557.]

### **Mad Scientists.**

COUNTERBLAST was a 1948 British movie about a Nazi mad scientist hoping to strike back for revenge in the immediate postwar years. The script was written by Guy Morgan and Jack Whittingham. Available on the DVD 50-movie boxed set "Mad Scientist Theatre".

Dr Bruckner escaped from prison where he had been sentenced for war crimes, specifically using humans to test biowarfare germs. He managed to assume the identity of a bacteriologist in England and went to work in a laboratory.

On the side he produced bacteria to release among the Brits, along with a vaccine to protect himself and Germans. He was found out and booked passage on a freighter in two days.

Because he was on the run with his bacterial cultures, he sneaked on board the deserted ship a day early. The ship was deserted because it was being fumigated for rats. Bruckner hid quietly, unaware he was sealed in. The movie ended with a view of his dead body. Fumigated and justice served.

The pace of the movie was glacial. Viewers are advised to watch the first 30 minutes where Bruckner settled into his deceit, then skip to the final 15 minutes when the action occurred. The rest of the movie was predictable filler.

"Escape To Death" was an old-time radio episode of THE BLACK CASTLE and aired on 1942-12-16, with no writer credited. Available as a free mp3 from the Old Time Radio Researchers at [www.otrr.org/OTRRLibrary](http://www.otrr.org/OTRRLibrary)

A thief pursued by the police took refuge in the residence of a mad scientist. He found himself imprisoned far worse than what the law would have done. The scientist was trying to create a race of ubermen, which translated to turning the thief into a gorilla.

What the doctor overlooked was that the gorilla had a mind of its own. The doctor shot the gorilla when it went out of control. Nonetheless the gorilla managed to strangle him before dying itself.

This was a 15-minute episode series. Don Douglas played all the parts. He changed his voice from normal (thief) to bwah-ha!-ha! (the mad scientist) to Igor (the laboratory assistant) to coarse gravel (the gorilla).

### **Transporter Beams.**

Star Trek didn't originate the idea of transporter beams. An early example of matter transmitters appeared in the short story "Radio Mates" by Benjamin Witwer (1927 July, AMAZING STORIES, available as a free download from [www.gutenberg.org](http://www.gutenberg.org)).

Mad scientist Bromley Cranston had been on a long expedition to Afghanistan. While he was away, his fiancée Venice Potter dumped him for a mutual friend, a local heir Howard Marsden.

Upon his return he decided that revenge was indeed a dish best served cold. He had been thinking about matter transmitters for some time. In the 1920s, radio was cutting edge technology. Two-way radio sets were just beginning to spread, and network broadcasting on a large scale would begin in the middle 1930s.

Cranston decided that radio waves could be used to transmit matter as well as sound. He diligently worked on a device that could transmit guinea pigs, then dogs, and finally humans. He set up an elaborate machine that first sent Venice into the ether, then himself.

The machine was rigged to self-destruct after the two were in the beyond. Cranston was confident that in the distant future someone would re-invent the matter transmitter. He and Venice would then be re-materialized in a receiver.

Fabricated evidence blamed Howard. He couldn't be proven to have committed murder but his behaviour afterward got him sent to an insane asylum. Howard spent his remaining days hunched over a radio set, tuning up and down trying to hear the voices of his wife Venice and Cranston.



## **Growing Things Big.**

THE WITCH'S TALE aired from 1931 until 1938 during the beginnings of broadcast radio. Available as free mp3s from the Old Time Radio Researchers at [www.otrr.org/OTRRLibrary](http://www.otrr.org/OTRRLibrary)

The narrator was a witch named Old Nancy, who did a lot of cackling, supposedly to add colour but very annoying in the aggregate. Perhaps it wasn't so wrong to burn witches after all.

"The Entomologist" aired on 1935-01-07 and was written by Alonzo Deen Cole. Beginning on a ship bound for South Africa, Edith Gardner and George Baldwin were a young betrothed couple. He was a lepidopterist.

A fellow passenger was the eminent entomologist Dr Sternoff. He was jealous and wanted Edith. The two men exchanged threats. A steward entering Baldwin's cabin was killed by something poisonous, evidently intended for Baldwin.

Jumping forward to the jungles of Natal where the entire company were hunting insects. Alarums developed, with a giant spider the size of a medium dog. Baldwin speculated it had been created by Sternoff.

Edith went missing and a manhunt got underway. Sternoff bwah-ha!-ha!-ed that his giant spiders would make him the master of the world. (His phrase, with multiple exclamation marks, and repeated more than once.) The final scene in Sternoff's laboratory was a messy one. He was hoist on his own spiders, then the place set on fire with whiskey.

## **Creating Life The Hard Way.**

THE HERMIT'S CAVE was a radio anthology series that aired from about 1935 into the 1940s. This was a syndicated series, which meant that local stations bought disks of the episodes and played them as they liked. No credits were given to the writers or actors. Available as free mp3s from the Old Time Radio Researchers at [www.otrr.org/OTRRLibrary](http://www.otrr.org/OTRRLibrary)

"The Search For Life" was about a mad scientist Hale Browson whose objective was, in his words, "*the re-creation of a dead person*". Not quite the expression most people would use. His chief bottle-washer Naida was against the idea.

His assistant Court Manville was equivocating about both the experiment and Naida. He decided he would kill Naida and then bring her back to life as an obedient slave. Court broached the idea to Hale, who wasn't entirely horrified.

Hale had tried a similar stunt with a homeless tramp but had only created a savage brute. Court dispatched Naida with poison, then set about reviving her with Hale's help.

The tramp escaped during the operation and disrupted Naida's revival. She came alive and killed all three men before dying herself. With no one left, the episode had to end. There are some things we were not meant to know, etcetera.

## **Extending Life The Hard Way.**

From the 2023 October issue of MYSTERY MAGAZINE was "Sherlock Holmes And The Grim Reaper" by Edward Lodi. Available from [mysterymagazine.ca](http://mysterymagazine.ca) or, as I bought it, Amazon print-on-demand.

Holmes was called on to investigate the disappearances of elderly sailors from various rooming houses. They were poor men, had no sizable legacies to steal, and were not connected to each other by some past event.

What they did have in common was the same charity service doctor. Holmes visited the doctor's office and learned he had been using the subjects for testing a serum that would make them young again. Trouble was that the rejuvenation only worked about a month before the men died of heart attacks.

THE SILICA GEL PSEUDOMORPH AND OTHER STORIES (1924) by Edward Hart was a collection of modern fables and what we now call science fiction. Available as a free download from [www.gutenberg.org](http://www.gutenberg.org)

The first story "The Silica Gel Pseudomorph" was about the discovery in a New Jersey sand pit of a man who had been silicified and turned into a transparent gel. He had been buried alive but the silica content of the groundwater preserved him.

When uncovered, he came alive and proved to be a nuisance. A boor, to tell the truth. He was a Spanish nobleman who thought the worst of anglos and commoners. Since everyone he met was an anglophone commoner, this led to trouble and strife.

In dry weather, his gel began turning white and flaking off, but a good rain stopped the loss. Eventually he stole a boat and sailed out onto the ocean. Nobody went looking for him.

“My Friend Zahn” was about two competing mad scientists, each of whom thought he had the answer to eternal life in good health. One of them did in fact have the solution and gave his friends a bottle each. One drop per day in the food. The elixir worked but the inventor's mind failed and there was no resupply.

The story will be more amusing to those with some knowledge of chemistry. The technobabble infodumps about how the elixirs worked seemed almost plausible.

## MISCELLANEOUS SCIENCE FICTION REVIEWS

by Dale Speirs

### **Blobs.**

“The Black Stone Statue” by Mary Elizabeth Counselman (1937 December, WEIRD TALES) was the tale of a blob captured in the Amazon jungle and brought back alive. Any organic material it touched turned into hard black stone.

The narrator, a rooming house tenant of little means, used the blob to turn its possessor into a black statue, then sold it to a museum. He repented, booked an ocean voyage, then threw himself overboard with the blob just as he deliberately touched it.

“Beware The Glob” by Eric Choi (2023 Sep/Oct, ANALOG) began with a pipeline worker in Alaska eaten by a red gelatinous mass. Yes, the blobs were back, identified from a 1957 outbreak that had been suppressed and hushed up.

The blob was temporarily halted by dropping moose and elks on it (no, seriously) to slow it down before it reached the village. Alas, the plan failed, as the swollen blob then sporulated.

“A Little Space Music” by Edward Willett, from his 2018 collection PATHS TO THE STARS, was a humorous story about a con man Jerry Smith, press-ganged aboard a starship transporting religious Squills to their home planet.

They were giant blobs who decided Earth musical theatre was The Truth of their religion. The captain needed a director and Smith got the job, like it or not. “*The Squills are alive to the sound of mucus*”. The first show was a success and Smith found himself busy teaching blobs to dance, or at least slither in unison.

### **Comedy Tonight.**

When broadcast radio spread from the 1930s to the death of old-time programmes in the middle 1950s, there were some strange things along the way. One of them was ventriloquist Edgar Bergen (father of Candice).

A ventriloquist on radio? Well, somehow he succeeded and became one of the biggest names in comedy. He performed before a live audience but the broadcasts were just as funny to those listening at home. His shows had a variety of names and sponsors.

Bergen’s main puppet was Charlie McCarthy, who often got equal billing. Charlie was a smart aleck kid always getting into trouble. His secondary puppet was Mortimer Snerd, a country bumpkin who wasn’t much smarter than his livestock.

“The Interplanetary Western” aired on 1956-04-08 as part of what was announced as THE EDGAR BERGEN HOUR. This was a variety show alternating between music and ventriloquist turns. Available as free downloads from the Old Time Radio Researchers at [www.otrr.org/OTRRLibrary](http://www.otrr.org/OTRRLibrary)

This particular episode had a seashell expert as a guest. Go figure. I’ll skip most of the episode as irrelevant to the interstellar and/or western way of life. The skit was billed as “The Adventures Of Captain Trace Grace, Space Ace”, brought to you by Atomic Flakes, the only cereal that contains uranium.

The story opened with Grace (played by McCarthy) and his crew in their rocket, circling the Moon and looking for a parking spot. A woman had stowed away on the spaceship. No sooner had she been identified than she dropped out of the story.

Grace bounced the spaceship to a bad landing. They saw a Moon alien approach them, who spoke in Snerd's voice. At that point, the skit cut off and a chanteuse sang an interminable yet forgettable song.

Dr Ernest Trattner, conchologist at the Aldrich Museum in Balboa, California, followed next. I couldn't find anything about him on Google, although there was an art museum by the name Aldrich. In any event, Trattner explained there were 35,000 serious shell collectors like him.

He said molluscs predate humans by many millions of years. Technically true, although I would have said 545 million years. The rest was trivia, aimed at the average intelligence of the audience, ie, very low. After a tenor sang and a cigarette commercial, more comedy about modern drama with Professor Snerd and various humans. Bergen was the straight man who tried to keep the panel on track but they kept veering off into gags.

THE BURNS AND ALLEN SHOW, like most old-time radio shows, aired under a variety of sponsorship names. Available as free downloads from the Old Time Radio Researchers at [www.otrr.org/OTRRLibrary](http://www.otrr.org/OTRRLibrary) They were appearing for Swan soap when the episode "Dr Jekyll And Mr Burns" aired on 1943-01-05.

Gracie Allen belonged to the Beverley Hills Uplift Society, a group of women determined to bring sunshine into people's lives whether or not they wanted it. The club's current fundraiser was to encourage birds to stay home in California instead of migrating south for the winter.

The women decided a play would be the thing and chose DR JEKYLL AND MR HYDE. They debated who had the ugliest husband to play the part of Hyde, and settled on George Burns. He was not enthusiastic about playing the part.

The auditioning for the female parts among the Uplift members was done by seeing how loud they could scream. That brought a neighbourhood boy to the front door. George answered and told the kid to go away because he was busy butchering a bunch of women.

After he chased away the kid, George went back inside and discovered the club meeting was over and the women had left. One of them, Tootsie, stayed behind to practice in the basement. Sometime later the boy returned with a police officer.

Predictable misunderstandings occurred. The vanished women were misconstrued as having been butchered by George. The moaning from the basement as Tootsie practiced further confirmed the belief of the policeman that he was on to something. All was explained and straightened out in the end.

### **Monsters Ahoy!**

From the DVD box set "50 Movies Horror Classics" was the 1961 movie CREATURE FROM THE HAUNTED SEA. This was possibly the cheapest of Roger Corman's movies, both in cost and quality.

The basic plot was corrupt officers fleeing the Cuban revolution with a chest of gold coins. Note the date of the movie; Castro had just taken over. They hired a gangster to transport them via cabin cruiser. He had his own ideas as to who should get the treasure. A sea monster trumped all of them.

This movie touched an all-time low in SFX. The cast are to be commended for keeping straight faces when the monster menaced them. The creature was made of shag carpet, its feet were scuba diver fins, and the crowning glory was its eyes, which were Ping-Pong balls glued on its face.

Another great scene was a radio operator who talked on the microphone held close to his lips while a bent cigarette dangled from his mouth. The final scene was good though. That was an underwater shot of the monster sitting on the treasure chest on the seabed, surrounded by human bones. It was eating a chicken leg which looked suspiciously like KFC.

### **Superheroes.**

I've never really cared for superhero fantasy. The premises are too ridiculous and the origin stories are even sillier. Radiation does not spawn superheroes, only cancer. Hiroshima, Nagasaki, Fukushima, Chernobyl, and Three Mile Island did not produce giant critters that roamed about trashing cities or humans with superpowers.

Modern explanations invoke genetic engineering, which might be passable but for the premises about how superheroes operate. A private superhero could not long keep his identity secret. The 1960s television series played Batman as camp, which is the only way superheroes can be played.

Notwithstanding that, I saw some novels at the library which poked fun at the standards of superheroes. PINNACLE CITY (2018) by Matt Carter and Fiona J.R. Titchenell was set in the city of that name.

A group of superheroes kept the city a bright and shiny place, at least for the better class of residents. They didn't go down to the poor side of town unless they could get their pictures in the news with an easy bust. For the most part, the police were stuck with the gangs and drug pushers.

Eddie Enriquez was a private investigator with limited superpowers. He scraped out a living doing insurance fraud cases and tailing unfaithful spouses. Then he was hired for a murder investigation of a non-human civil rights activist.

The secondary plot and point-of-view was about bright and perky Kimberly Kline, working title Solar Flare. She had just been promoted to the Guardians and was quickly learning that Pinnacle City had a dark side. She and Enriquez soon crossed paths and joined forces to deal with the corruption in high places.

The grand finale was at the mayor's house, where every superhero crowded in trying to get a piece of the action. Justice sort of triumphed but not in the standard way.

James Alan Gardner had a series of novels about amateur superheroes who were basically supporting actors to the leading men and ladies. The novels are set in Canada, so it will be funnier to Canucks because much of the action took place in Waterloo, Ontario.

You have to be a Canadian to understand why Waterloo would be a humorous place for superheroes. American readers can think of it as being set in some minor city such as Lancaster, Pennsylvania.

In any event, the first novel was ALL THOSE EXPLOSIONS WERE SOMEONE ELSE'S FAULT (2017). The setup for the series began with the Darklings taking control of human society. They were not supervillains, terrorists, or monsters, but best described as oligarchs with superpowers.

The Sparks were the good guys, superheroes without the wealth and privileges. The narrator was Kim Lam, who roomed with Miranda, Shar, and Jools at the University of Waterloo.

Some Darklings were doing a laboratory experiment that went seriously wrong, as in ka-boom! and bang! The four women were nearby and came rushing over. The laboratory was filled with a copper-coloured heavier-than-air gas. In the centre was some sort of interdimensional rift.

Out of the rift came swarming tiny bright flames which penetrated into the bodies of the women. Once the alarms and campus police were finished, Kim and friends discovered they now had assorted superpowers. They became Sparks and landed on their feet fighting Darklings before they even realized what was happening.

During calm moments, they tested the limits of their powers. Those superpowers did not bring supergenius with them. Some of the converted women weren't bright sparks before they became Sparks.

The other question was what to wear since superheroes must be dressed for the occasion. They couldn't do derring deeds looking like Connie Willis. All that had to take a back seat to the ongoing fights. Eventually everything settled down for a quiet contemplative moment before the sequel.

Which was THEY PROMISED ME THE GUN WASN'T LOADED (2018) and starred Jools in her turn as a narrator. The MacGuffin of the plot was a lost supergun, although no one was certain how it actually operated.

Much to-ing and fro-ing with other superheroes and bad guys. Jools joined up with superhero Robin Hood and his Merry Men, spending time in a forest not of Sherwood.

Much chanting of magical spells too, so the plot wasn't all radioactive spiders. After the denouement, the victors went off to be interviewed on a breakfast television show.

### **Starships.**

THE FREEZE-FRAME REVOLUTION (2018) by Peter Watts took place on a generation starship dropping off stargates as it circulated around the Milky Way. At relativistic speeds, 60 megayears had passed on Earth at the beginning of the novel when the protagonist Sunday Ahzmundin was woken out of hibernation by the ship's computer Chimp.

Over millions of years the starship had mutated. Worse yet, nothing was coming through the stargates from the other ends. Sunday and cohort led a revolution of sorts against Chimp. A collision with a singularity knocked the starship sideways. The ending was also knocked sideways and more or less dwindled to a faint conclusion.

This novel had a gimmick whereby random letters in the text were printed in red ink. I jotted them down and got the following message (typos in the original). *I see you've found my eighth notes. the first few any wa; for her est checkout the archived gene map for us up era* At that point the message degenerated into gibberish so I gave up.

## **CRY UNCLE AND LET SLIP THE DOGS OF WAR: PART 7**

by Dale Speirs

[Parts 1 to 6 appeared in OPUNTIA's #361 to 364, and 462, and 556.]

### **Man From Monthly Magazines.**

THE MAN FROM U.N.C.L.E. MAGAZINE was digest-sized and published from February 1966 until January 1968. I don't have a complete run nor any mint-condition copies, but do have a fair number of issues in what is politely described as good reading condition.

Each issue contained an UNCLE novella, always described as a "*complete novel*". This was the usual pulp fiction exaggeration since the stories were only about 70 pages or so. The rest of the issue was filled with unrelated short fiction, mostly mystery, twist-ending crimes, and two-fisted action stories.

The UNCLE stories were all credited to Robert Hart Davis, a house name of the publisher Leo Margulies. A wide variety of genre authors penned these stories. When the television series died, so did the magazine.

### **Man From Magazines.**

"The Dolls Of Death Affair" (1967 April, TMFUM) began with a raid by UNCLE on a THRUSH communications and cryptography depot in the Swiss Alps. The raid failed, as the THRUSH technicians got away clean with their secret files and equipment.

How they escaped so quickly was later revealed in rural upstate New York by Napoleon Solo and Illya Kuryakin. Following up on an apparently unrelated lead, they discovered THRUSH had been testing flying saucers for the past two decades. Since the UFO craze began in 1947, in fact.

All genuine UFO reports were of various prototypes designed by Dr Dohm, one of the resident mad scientists of THRUSH. The saucers could travel great distances in seconds, giving THRUSH a tremendous advantage.

To avoid problems with authorities, Dohm had half-sized green mechanical dolls march around the saucers whenever the aircraft landed. The little green men served to discount the reports any civilians may have made.

The next excursion was to Dohm's headquarters on a South Pacific island. A volcano, of course, and where all the saucers were based when not in use, as well as the factory. The ending was quite predictable, with a gunfight to the death and lava flowing over everything.

### **Pause For An Extended Digression.**

The tradition of mad scientists building laboratories in remote areas goes back to the beginnings of science fiction. Ian Fleming, the creator of James Bond, was also peripherally involved in the UNCLE series and suggested the name Solo.

The supervillains in the Bond movies and UNCLE stories always had laboratories and factories in remote areas. One wonders though, how those massive facilities were built without the outside world knowing.

Consider the logistics of building inside a volcano. The fill from the excavation had to be dumped somewhere unnoticeable. Hundreds or thousands of workers were needed. They had to be housed and fed at great expense, with food brought in.

Even if sworn to secrecy, one or a few would inevitably blab to a family member or friend about the big project they were working on. Reconnaissance satellites or aircraft would eventually spot the traffic to the secret base.

The spy agencies would run financial audits to track the flow of materials. The Russians couldn't keep their Siberian missile silos hidden from the Americans. The Americans didn't even bother trying to hide their silos in the Great Plains.

If I were a mad scientist, with a suitable fortune of course, my laboratories or factories would not be centralized in one location. Most of them would be scattered in various cities in industrial warehouse districts.

They would operate as legitimate manufacturers under different corporate names. They would sell products out the front door to the public, while in the back room with a private entrance the machine parts would be manufactured. Assembly of the superscience devices would be elsewhere.

Building a superscience rocket? First build a skyscraper with one heck of an atrium to act as a silo. Biological weapons? Build several medical laboratories under different names. Want to rule the world with supercomputer networks that collect information on everyone, to be sold to any comer? Oh wait, that's been done.

### **Back To The Man From Magazines.**

"The Ugly Man Affair" (1967 June, TMFUM) was about THRUSH's latest scheme. They were capturing UNCLE personnel, draining their blood, and substituting a fluid that made them suggestible to treason. Not just agents, but secretaries and clerks, who probably knew more about UNCLE operations than the field agents.

However, that was a sideshow for THRUSH, who were also using the drug to sabotage a peace conference. Count Lugo Beladrac was the fiend in charge. He was the usual type of supervillain, the kind who never just shot someone dead but planned an elaborate stage-managed death.

Such procedures enabled the heroes to escape with a single bound, as indeed did Napoleon Solo and Illya Kuryakin. They rendered Beladrac dead by stabbing him through the heart with a wooden stake. No more blood sucking from him.

"The Electronic Frankenstein Affair" (1967 July, TMFUM) began on the Grand Banks shore of Newfoundland, then jumped to the Gobi desert. THRUSH had developed a new eavesdropping device with incredible range and penetrative ability.

The device was in the form of a giant robot, which made it more useful. The thing was invented by a mad scientist working for THRUSH. And yes, he had a beautiful daughter. Napoleon Solo and Illya Kuryakin chased them all about.

Trouble was, the robot wasn't reliable. Vacuum tubes kept blowing, which was a puzzle since transistors would have been more reliable, lighter, and use less power. Solid state circuits should have been standard for any mad scientist even in the middle 1960s.

The grand finale was back at the Gobi Desert. After assorted contretemps, Solo and Kuryakin managed to destroy the robot and its inventor. And so back to New York City for the next adventure.

### **The Man From Paperbacks.**

THE MAD SCIENTIST AFFAIR (1966) by John T. Phillifent was TMFUP #5. The mad scientist in question was Irish biochemist Dr Michael O'Rourke. He didn't have a beautiful daughter like most mad scientists, but was assisted by two beautiful nieces Bridget and Sarah in his castle qua laboratory.

Ostensibly he worked for a brewery on yeast research but had some sort of sideline that UNCLE wanted to know about. His colleague was Dr Vittorio Trilli, an Italian THRUSH scientist, also mad.

Napoleon Solo and Illya Kuryakin were assigned to the case. The former stayed in New York City where Sarah was presenting a paper, while the latter went to Ireland to watch Trilli.

Five minutes before she was to present her paper, Sarah suddenly developed laryngitis. Solo suspected THRUSH did that with a drugged drink. Her paper was available as a mimeographed article distributed at the convention.

THRUSH got into the copy room and altered the text into subtle gibberish. They didn't want the real import of the paper to become known. The only delegate who caught on was Professor Amazov, who accosted Sarah and loudly

proclaimed her paper was nonsense. He ought not to have done that, as a THRUSH agent overheard him and two pages later shot Amazov dead with a silenced pistol.

Phillifent was a British science fiction writer. He was obviously having fun with a Boston biochemistry professor whose name was not far removed from Amazov.

Sarah went back to Ireland, trailed by Solo and assorted THRUSH agents. There she learned her uncle and Bridget were negotiating with THRUSH for his discovery, a psychoactive that made humans over-confident to the point of reckless behaviour.

Uncle Mike had also invented a catalyst that turned seawater into gelatin. Using on incoming tides, it could easily plug up a harbour or back up sewer outfalls. There were excursions across Ireland and Britain, plus many explosions. The mad scientists were dealt with, as they usually are, and THRUSH was once more denied the trophy.

THE VAMPIRE AFFAIR (1966) by David McDaniel began with an UNCLE agent dead in Transylvania from severe acute anemia. That is to say, he had been drained of his blood through two punctures in his neck.

That brought Napoleon Solo and Illya Kuryakin first to Hungary, then Romania. There were no wampyrs, the authorities told them. Pay no attention to the superstitious peasants. Kuryakin had the problem that Russians were hated in both countries, so he had to keep a low profile.

Lots of excursions through the Romanian woods, encounters with giant bats and werewolves, and a meeting with an American named Forrest J Ackerman, who was researching Dracula in the local library.

For those ignorant of early science fiction fandom, Ackerman was indeed real, and published a monster magazine. McDaniel was active in fandom under the pseudonym Ted Johnstone, so he name-checked Forry for the fun. He also name-checked other fans in his UNCLE novels, the majority of whom are too obscure today to mention here.

As Solo and Kuryakin traveled about, they kept crossing paths with Count Zoltan Dracula, usually when he was fleeing an mob of angry peasants. He claimed to be a descendant of the Dracula, Vlad the Impaler.

Eventually all was revealed to be THRUSH trickery designed to scare the locals away from their operation. THRUSH had discovered Attila the Hun's massive cache of gold and treasure, lost for centuries.

The loot would finance THRUSH operations quite well. The treasure was worth millions, back when a million was equivalent to a billion today. But with Solo and Kuryakin on the job, the plan came to naught.

## **FELINE COZIES: PART 4**

by Dale Speirs

[Parts 1 to 3 appeared in OPUNTIA's #537, 543, and 558.]

When I was a boy back on the ranch, we had all kinds of barn cats but none of them ever investigated crimes. The only time they meowed at us was when their food dishes were empty, not to draw attention to clues. Mostly they just ate, slept, or went out hunting mice in the fields.

### **Midnight Louie: The Original Series.**

Carole Nelson Douglas (1944-2021) was a prolific novelist with several book series. The best known was the Midnight Louie cat cozies. There were 26 novels in alphabetical order plus two volumes that bookended the series.

Midnight Louie roamed about the Strip in Las Vegas but deigned to consider Miss Temple Barr's apartment as his home base. She was a freelance publicist and murder magnet. Her name will be an in-joke for lawyers.

Midnight Louie was a fat cat, feral in his upbringing but becoming more domesticated as the series evolved. In the later books he came across another feral cat who told him she was his daughter Midnight Louise.

Midnight Louie narrated his own adventures from a cat's point of view down on ground level. With his daughter, the two felines snooped about the hotels along the Strip.

CAT IN A ZEBRA ZOOT SUIT (2015) was mostly back stories of some of the supporting characters. Temple Barr and Midnight Louie investigated a murder to exonerate a friend (hers). In the background, two different conspiracies operated, or three, depending on how you interpret one subplot with Ulster Irish.

Lots of alarums, both in Barr's apartment and throughout Las Vegas. Midnight Louie dealt with the clowder of feral cats he came from, supplying them with food stolen out of Barr's pantry. In exchange, they gave him help in solving the case.

Centred in the novel was a casino called the Zebra Zoot Suit Choo-Choo Club. The place had gone out of business in the 1950s because it was too far from The Strip. However, its gaming licence was still valuable, so assorted underground owners returned to the site every two years to keep the licence valid. Some of the nasty business happened there. This was the penultimate novel in the series, so a lot of loose threads were finally tied off.

CAT IN AN ALPHABET ENDGAME (2016) was the final novel in the Temple Barr series with Midnight Louie. There were two plots. Barr had to make a decision between two men and finally chose Mr Right. There were also terrorists up to their usual rubbish, which kept Midnight Louie busy.

Barr's landlady shot an intruder in her penthouse apartment and put him off the balcony. He landed in a patch of opuntias, which stabbed him to death. One of the longer-spined species presumably, perhaps a cholla.

The clowder of feral cats with whom Midnight Louie associated kept him busy. He was actually better at explaining the action to the reader than Barr. In the end, everything was wrapped up. For now.

### **Coastal Cats.**

Darlene Ryan wrote several series of cat cozies under the name Sofie Kelly or Sofie Ryan. The series I'll mention here was published under the latter pseudonym.

THE FAST AND THE FURRIEST (2018) put Sarah Grayson and her cat Elvis to work trying to clear the name of her shop assistant Mac Mackenzie. A woman named Erin Fellowes came into town, entered the shop, and introduced herself as a friend of Mac's wife Leila.

Sarah had no idea Mac was married or that Leila was in a coma in a long-term care facility. Erin didn't survive past Chapter 2, so Sarah and Elvis investigated. She used the cat as a lie detector. He didn't react if someone told the truth but a liar would make him twitch, presumably because of some physiological sign that only a cat could detect.

Lots of family history was teased out of a messy pile of yarn. The murderer had once courted Leila and was seeking revenge. Elvis was the furriest but not the fastest.

TOTALLY PAWSTRUCK (2022) began with Stella Hall finding a body in the street. She and the defunct Vincent Swift were both members of the library board and had publicly argued over many things. That closed the book on the case as far as the Deppity Dawgs were concerned.

Once more unto the breach for Sarah Grayson and her friends who called themselves Charlotte's Angels. A flock of Miss Marples let loose. Elvis the cat seldom appeared. The usual sort of alarums and excursions ensued. Years ago Swift had killed someone in a traffic accident and his murderer in turn got revenge on him.

### **Carolina Cats.**

The Cats In Trouble Mysteries was a cozy series written by Leann Sweeney. The protagonist and Miss Marple was Jillian Hart of Mercy, South Carolina. Recently widowed, she had a shop specializing in quilts for cats, adhering to the proclivity of Miss Marples to have ridiculous businesses.

To be fair, the novels mentioned she toured frequently to cat shows. Presumably she also sold on the Internet. They also mentioned her using smartphones and laptops, so unlike many cozy heroines in the 2010s, she actually acknowledged the real world economics.



Jillian sleuthed with the help of her three cats Merlot, Chablis, and Syrah. Her best friend was Deputy Sheriff Candace Carson, who helped with the Marpleing, or vice versa depending on viewpoint.

THE CAT, THE VAGABOND, AND THE VICTIM (2014) began with a national news story about a cat named Clyde. He traveled 200 miles to his former home in Mercy, only to find the body of his owner Norman Jeffrey. The local news report was picked up by the mass media.

The animal shelter where Clyde was taken came under siege by reporters. The shelter smuggled Clyde into Jillian Hart's house. Originally Jeffrey was thought to be a natural death since he was dying of cancer and heart disease. The autopsy revealed he had been poisoned. The question was why someone murdered a man who would soon die anyway.

Clyde settled in with Jillian's cats Syrah, Merlot, and Chablis, but decided once more to visit his old home. There was a second body, Buford Miller, a home care worker who had looked after Jeffrey. The death threw gasoline on the fire for the police, the news media, and Miss Marple, aka Jillian.

The sleuthing turned up old family feuds, Jeffrey's illegitimate son, an inheritance scramble, and drug dealing by Miller. In the denouement, shots were fired. The culprit was arrested for yearning too much for the inheritance. Clyde found a new home with Jeffrey's son, who lived in New York City. Hopefully he would henceforth stay put.

THE CAT, THE SNEAK, AND THE SECRET (2015) took place during Jillian Hart's preparations to marry Tom Stewart. His grown son Finn adopted a tortoiseshell cat from the Mercy Animal Sanctuary.

The problem was the cat was an escape artist, much like Clyde. She always came back though, bearing some sort of knickknack, sock, or other human impedimenta. Finn named her Magpie. The excitement began when she came back with a gold locket smeared with human blood.

Jillian was hampered in her Marpleing by having to prepare for her wedding. Then a man's body was found in a construction site, followed in short order by the police chief dying from poison. Whenever the plot slowed, Magpie brought in another piece of evidence.

The culmination was the standard gunpoint confrontation with the murderer. She had been acting out over an illegitimate daughter and toxic family issues. The wedding was a success however. Nobody died during the ceremony.

### **Cat Cafés.**

Cate Conte (pseudonym of Liz Mugavero) had a cozy series about Madalyn (Maddie) James of Daybreak Island, Massachusetts. She operated a cat café where customers could have a coffee and adopt a cat in one convenient stop. Apparently it's a real thing, although one wonders how the local health board reacts. Maddie found a stray cat and took it in, naming him J.J.

THE TELL TAIL HEART (2019) gave no peace to Maddie James. The off-season allowed time for the cat café to do some renovations, plus she was courting a dog groomer. On the other hand, a woman claimed J.J. was her cat.

Mystery author Jason Holt was visiting the island and became part of a different mystery story when his body was found floating in the water. Lesser alarums padded out the novel, such as ship models stolen from a yacht club display.

There was a crime scene stakeout with half the villagers crouching in the shrubbery and waiting. Maddie was in the middle of everything, so much so that she was asked "*Do we have a command center or anything?*". She was a thoroughly modern Fletcher, using her cellphone camera to copy documents while snooping illegally.

The final confrontation was with a writer who wanted to take over Holt's work for a true crime book about an unsolved murder years ago. The culprit in that case was now on Daybreak Island, a suitable subject for blackmail. There was no suspense in the outcome and the killer got what he deserved.

A WHISKER OF A DOUBT (2020) took place during the Christmas season. Maddie James' café was booming, and cats were being adopted left, right, and centre. She was looking after a colony of feral cats on the island.

While feeding those cats out in the woods she found the body of Virgil Proust, an adjacent homeowner. His wife didn't like cats and evidently someone didn't like Virgil. As usual, the Deppity Dawgs arrested the wrong person, so Maddie went detecting.

New Year's Day came and went along with a variety of alarums designed to fill out the middle of the book. Animal activists inserted themselves into the plot. As per standard practice, Maddie got herself trapped with the killer, who tried to strangle her with Christmas tree lights.

The murderer's boyfriend was a drug dealer. Virgil saw a deal being done at her house so she killed him. The neighbourhood voted to keep the feral cat colony.

### **Cat Shows.**

MURDER OF THE CAT'S MEOW (2012) by Denise Swanson was a novel in a cozy series about Skye Denison of Scumble River, Illinois. She was a school psychologist in the blood-soaked village and Marpled extensively.

Local business owner Bunny Reid operated a combination bowling alley and speed-dating service. To draw in customers for both, she hosted a cat show. That was where the trouble began, when a losing contestant took serious offence at the judge for denigrating his cat. He tried to choke the judge but the fight was broken up.

Someone else finished the job. The judge's corpse was found the next morning dead from poison. Skye's response upon finding the body was to scream, although she did manage to stifle herself. As this was the 18<sup>th</sup> novel in the series, her response was unbelievable and out of character.

There had been bribery in the cat show but as Skye unearthed the messy parts of the village's litter box, she found corruption in the administration. The deceased was not only a felonious feline fancier but got in with the wrong crowd.

### **Extreme Cats.**

Shirley Rousseau Murphy extended the idea of cat cozies to the extreme, with cats conducting their own investigations. Set in Molina Point, California, the protagonist was Joe Grey, a cat named for his colour. His friend was a female tabby named Dulcie.

Both cats had been transformed by unexplained fantasy and lots of handwaving into felines who could understand human speech and read English text. Oh, and the cats could speak to their owner Clyde Damen.

CAT UNDER FIRE (1996) began with the trial of Rob Lake for the murder of Janet Jeannot. Both were artists and ex-lovers. She died in a fire under suspicious circumstances, and most of her paintings were destroyed. Joe didn't care but Dulcie thought Rob was innocent and went Marpleing, if a cat can be said to Marple.

As with the middle-aged women who Marpled, there were back stories and old romantic entanglements to be dug up by the cats. Several suspects emerged. The killer was identified by the cats. But how to tell the humans?

Joe climbed into a police cruiser while the officer was elsewhere and called in on the two-way radio that there was evidence in the murderer's storage unit. The killer had substituted fake paintings for Janet's real paintings. He then poisoned her and setup the fire to burn down her studio and the fakes. Dead artists are worth more. After waiting awhile, the murderer would discreetly feed the original paintings into the art market.

CAT PAY THE DEVIL (2007) kept the cats busy chasing escaped convict Cage Jones. He was seeking revenge against the star witness who testified for the prosecution. He also sought a fortune in miniature solid gold figurines of devils called huacas.

The huacas had been stolen in Panama. Cage wanted to cash them in with a fence dealing in stolen antiquities. Joe and Dulcie managed to get the huacas, then hide them on a rooftop where humans would never think of looking.

Cage died the hard way from gunfire. After he was buried, Joe brought one of the huacas to the grave site and buried it in the freshly excavated soil. Let Cage have one for eternity.

CAT STRIKING BACK (2009) began with Joe Grey accidentally discovering a murder scene. Blood, drag marks, but no body. With Dulcie and several other cats, they sniffed out the grave of the victim. There was trouble and strife throughout the neighbourhood, including feuds and break-ins.

The plot was prodded along by the cats anonymously telephoning the police and tipping them off to where the bodies were buried. The murderer, who was also the house thief, was an ailurophobe. That kept him off balance as the cats kept crossing his path.

Not just figuratively, for he met his end in fear of them. That resulted in him driving an RV loaded with loot off a cliff into a lake. His drowning saved the state the cost of a trial although that was negated by the cost of professional divers and a heavy crane to life the wreckage out of the water.

CAT TELLING TALES (2011) began with the Damen family afflicted with a freeloader and her two small children. She had a suspicious background, as did her ex-husband. Various people began disappearing and assorted abandoned cats tugged at the reader's heartstrings.

There was a house fire which killed a woman and tied into the freeloader's case. The police did some investigating but Joe Grey and his fellow cats were the ones who broke open the case.

The death toll rose, trails were sniffed out, and one of the cats learned how to operate a laptop. Well, if the cats could read and speak English, why would hitting a keyboard be so difficult. The murderer was involved in massive real estate fraud. He was tripped up by paper trails of forged documents and scent trails sniffed out by various cats.

CAT BEARING GIFTS (2012) was a treasure hunt as thieves and cats scrambled for gold coins and jewels. One cat was stranded in the wilderness, fending off coyotes as she made her way back home.

Outlaws and bodies littered the landscape in the search for the thieves. The assorted threads were tied up. The novel ended with the cats philosophizing about life in the next world.

## SEEN IN THE LITERATURE

### Astronomy.

Glazebrook, K., et al (2024) **A massive galaxy that formed its stars at  $z \sim 11$ .** NATURE 628:doi.org/10.1038/s41586-024-07191-9

Authors' abstract: *The formation of galaxies by gradual hierarchical co-assembly of baryons and cold dark matter halos is a fundamental paradigm underpinning modern astrophysics and predicts a strong decline in the number of massive galaxies at early cosmic times.*

*Extremely massive quiescent galaxies (stellar masses of more than  $10^{11}$  solar masses) have now been observed as early as 1 to 2 billion years after the Big Bang. These galaxies are extremely constraining on theoretical models, as they had formed 300 to 500 megayears earlier, and only some models can form massive galaxies this early.*

*Here we report on the spectroscopic observations with the JWST of a massive quiescent galaxy ZF-UDS-7329 at redshift  $3.205 \pm 0.005$ . It has eluded deep ground-based spectroscopy, it is significantly redder than is typical and its spectrum reveals features typical of much older stellar populations.*

*Detailed modelling shows that its stellar population formed around 1.5 billion years earlier in time ( $z \sim 11$ ) at an epoch when dark matter halos of sufficient hosting mass had not yet assembled in the standard scenario.*

*This observation may indicate the presence of undetected populations of early galaxies and the possibility of significant gaps in our understanding of early stellar populations, galaxy formation and the nature of dark matter.*

Uusitalo, J., et al (2024) **Transient offset in  $^{14}\text{C}$  after the Carrington Event recorded by polar tree rings.** GEOPHYSICAL RESEARCH LETTERS 51:DOI.ORG/10.1029/2023GL106632 (available as a free pdf)

Authors' abstract: *The Carrington event of 1859 has been the strongest solar flare in the observational history. It plays a crucial role in shedding light on the frequency and impacts of the past and future Solar Energetic Particle (SEP) events on human societies.*

*We address the impact of the Carrington event by measuring tree ring  $^{14}\text{C}$  with multiple replications from high-latitude locations around the event and by comparing them with midlatitude measurements.*

*A transient offset in  $^{14}\text{C}$  following the event is observed with high statistical significance. Our state-of-the-art  $^{14}\text{C}$  production and transport model does not reproduce the observational finding, suggesting features beyond present understanding.*

*Particularly, our observation would require partially fast transport of  $^{14}\text{C}$  between the stratosphere and troposphere at high latitudes. The observation is consistent with the previous findings with the SEP events of 774 and 993 CE for which faster integration of  $^{14}\text{C}$  into tree rings is observed at high latitudes.*

Frost, A.J., et al (2024) **A magnetic massive star has experienced a stellar merger.** SCIENCE 384:doi.org/10.1126/science.adg7700

*Authors' abstract: Massive stars (those  $>8$  solar masses at formation) have radiative envelopes that cannot sustain a dynamo, the mechanism that produces magnetic fields in lower-mass stars. Despite this, approximately 7% of massive stars have observed magnetic fields, the origin of which is debated.*

*We used multi-epoch interferometric and spectroscopic observations to characterize HD 148937, a binary system of two massive stars. We found that only one star is magnetic and that it appears younger than its companion.*

*The system properties and a surrounding bipolar nebula can be reproduced with a model in which two stars merged (in a previous triple system) to produce the magnetic massive star. Our results provide observational evidence that magnetic fields form in at least some massive stars through stellar mergers.*

## **Satellites.**

Liang, W., et al (2024) **Vestiges of a lunar ilmenite layer following mantle overturn revealed by gravity data.** NATURE GEOSCIENCE 17:doi.org/10.1038/s41561-024-01408-2

*Authors' abstract: The lunar crust and mantle formed through the crystallization of a magma ocean, culminating in a solid cumulate mantle with a layer of dense ilmenite-bearing cumulates rich in incompatible elements forming above less dense cumulates.*

*This gravitationally unstable configuration probably resulted in a global mantle overturn, with ilmenite-bearing cumulates sinking into the interior. However, despite abundant geochemical evidence, there has been a lack of physical evidence on the nature of the overturn.*

*Here we combine gravity inversions together with geodynamic models to shed light on this critical stage of lunar evolution.*

*We show that the observed polygonal pattern of linear gravity anomalies that surround the nearside mare region is consistent with the signature of the ilmenite-bearing cumulates that remained after the global mantle overturn at the locations of past sheet-like downwellings.*

*This interpretation is supported by the compelling similarity between the observed pattern, magnitude and dimensions of the gravity anomalies and those predicted by geodynamic models of the ilmenite-bearing cumulate remnants.*

*These features provide physical evidence for the nature of the global mantle overturn, constrain the overturn to have occurred before the Serenitatis and Humorum basin-forming impacts and support a deep Ti-rich mantle source for the high-Ti basalts.*

## Origin Of Life.

Wei, G.Y., et al (2024) **Lithium isotopic constraints on the evolution of continental clay mineral factory and marine oxygenation in the earliest Paleozoic Era.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adk2152 (available as a free pdf)

[When the first microscopic photosynthetic algae evolved billions of years ago, they did not oxygenate Earth's atmosphere in one smooth rise. The free oxygen they generated was first absorbed by exposed minerals, followed by a pulse of oxygen in the atmosphere, followed by erosion which exposed fresh minerals to absorb oxygen.]

[After many cycles, there wasn't much left to absorb oxygen. Then the atmosphere became permanently oxygenated. This paper discusses one of those pulses when clays absorbed oxygen.]

Authors' abstract: *The evolution of oxygen cycles on Earth's surface has been regulated by the balance between molecular oxygen production and consumption. The Neoproterozoic-Paleozoic transition likely marks the second rise in atmospheric and oceanic oxygen levels, widely attributed to enhanced burial of organic carbon.*

*However, it remains disputed how marine organic carbon production and burial respond to global environmental changes and whether these feedbacks trigger global oxygenation during this interval.*

*Here, we report a large lithium isotopic and elemental dataset from marine mudstones spanning the upper Neoproterozoic to middle Cambrian [~660 million years ago (Ma) to 500 Ma]. These data indicate a dramatic increase in continental clay formation after ~525 Ma, likely linked to secular changes in global climate and compositions of the continental crust.*

*Using a global biogeochemical model, we suggest that intensified continental weathering and clay delivery to the oceans could have notably increased the burial efficiency of organic carbon and facilitated greater oxygen accumulation in the earliest Paleozoic oceans.*

Cohen, Z.R., et al (2024) **Natural soda lakes provide compatible conditions for RNA and membrane function that could have enabled the origin of life.** PNAS MEXUS 3:doi.org/10.1093/pnasnexus/pgae084 (available as a free pdf)

Authors' abstract: *Where did cells originate on the early Earth? The first cells (protocells) are thought to have consisted of informational and catalytic RNAs inside membrane vesicles. However, RNA function requires divalent cations, such as  $Mg^{2+}$ , whereas membranes of environmentally available amphiphiles (e.g. fatty acids) are disrupted by divalent cations.*

*Here, we show that natural soda lake water, which contains ~1 mM divalent cations, could provide a suitable environment for three processes likely important for the origin of cellular life: nonenzymatic RNA polymerization, ribozyme activity, and encapsulation by prebiotic membranes.*

*The origin of life likely occurred within environments that concentrated cellular precursors and enabled their co-assembly into cells. Soda lakes (those dominated by  $Na^+$  ions and carbonate species) can concentrate precursors of RNA and membranes, such as phosphate, cyanide, and fatty acids.*

*Subsequent assembly of RNA and membranes into cells is a long-standing problem because RNA function requires divalent cations, e.g.  $Mg^{2+}$ , but  $Mg^{2+}$  disrupts fatty acid membranes. The low solubility of Mg-containing carbonates limits soda lakes to moderate  $Mg^{2+}$  concentrations (~1 mM), so we investigated whether both RNAs and membranes function within these lakes.*

*We collected water from Last Chance Lake and Goodenough Lake in Canada. Because we sampled after seasonal evaporation, the lake water contained ~1 M  $Na^+$  and ~1 mM  $Mg^{2+}$  near pH 10. In the laboratory, nonenzymatic, RNA-templated polymerization of 2-aminoimidazole-activated ribonucleotides occurred at comparable rates in lake water and standard laboratory conditions.*

*Additionally, we found that a ligase ribozyme that uses oligonucleotide substrates activated with 2- aminoimidazole was active in lake water after adjusting pH from ~10 to 9.*

*We also observed that decanoic acid and decanol assembled into vesicles in a dilute solution that resembled lake water after seasonal rains, and that those vesicles retained encapsulated solutes despite salt-induced flocculation when the external solution was replaced with dry-season lake water.*

*By identifying compatible conditions for nonenzymatic and ribozyme-catalyzed RNA assembly, and for encapsulation by membranes, our results suggest that soda lakes could have enabled cellular life to emerge on Earth, and perhaps elsewhere.*

Quevarec, L., et al (2024) **Tracking the early events of photosymbiosis evolution.** TRENDS IN PLANT SCIENCE 29:doi.org/10.1016/j.tplants.2023.11.005 (available as a free pdf)

[Chloroplasts were originally free-living microbes which became incorporated into plant cells. Eukaryotes are cells with membrane-enclosed nuclei. Today all animals and land plants are eukaryotes.]

Authors' abstract: *Oxygenic photosynthesis evolved in cyanobacteria around 3.2 giga-annum (Ga) ago and was acquired by eukaryotes starting around 1.8 Ga ago by endosymbiosis.*

*Photosymbiosis results either from integration of a photosynthetic bacteria by heterotrophic eukaryotes (primary photosymbiosis) or by successive integration of photosymbiotic eukaryotes by heterotrophic eukaryotes (secondary photosymbiosis).*

*Primary endosymbiosis is thought to have been a rare event, whereas secondary and higher-order photosymbiosis evolved multiple times independently in different taxa.*

Zhang, S., et al (2024) **Subaerial volcanism broke mid-Proterozoic environmental stasis.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adk5991 (available as a free pdf)

[The period between 1.8 to 0.8 gigayears ago is often referred to as the Boring Billion because nothing much happened on Earth. Plate tectonics came to a temporary standstill and single-celled microbes did not evolve any further.]

Authors' abstract: *The mid-Proterozoic, spanning 1.8 to 0.8 billion years ago, is recognized as a phase of marine anoxia, low marine primary productivity (MPP), and constrained eukaryotic biodiversity.*

*However, emerging evidence suggesting intermittent environmental disturbances and concurrent eukaryotic evolution challenges the notion of a stagnant Earth during this era.*

*We present a study detailing volcanic activity and its consequential impact on terrestrial weathering and MPP, elucidated through the examination of 1.4-billion-year-old tropical offshore sediments.*

*Our investigation, leveraging precise mercury (Hg) and lithium (Li) isotopic analyses, reveals the introduction of fresh rock substrates by local volcanism. This geological event initiated a transformative process, shifting the initial regolith-dominated condition in tropical lowland to a regime of enhanced chemical weathering and denudation efficiency.*

*Notably, the heightened influx of nutrient-rich volcanic derivatives, especially phosphorus, spurred MPP rates and heightened organic carbon burial. These factors emerge as potential drivers in breaking the long-term static state of the mid-Proterozoic.*

## **Paleobiology.**

Botha, T.L., and D.C. García-Bellido (2024) **A new species of the iconic triradial Ediacaran genus *Tribrachidium* from Nilpena Ediacara National Park, Flinders Ranges (South Australia).** JOURNAL OF PALEONTOLOGY 98:10.1017/jpa.2023.99 (available as a free pdf)

[*Tribrachidium* is the only life form known which has triradial symmetry. All other life forms are biradial or five-part symmetrical.]

Authors' abstract: *The Ediacara Biota is a suite of globally distributed, exceptionally-preserved, soft-bodied organisms appearing in the fossil record from 575 million years ago to the base of the Cambrian. Nilpena Ediacara National Park (NENP) in the Flinders Ranges of South Australia preserves one of the most morphologically and taxonomically diverse assemblages of this period.*

*Tribrachidium heraldicum* is one of the more abundant taxa at this site (>200 specimens) and is described as a circular organism, ~3 to 50 mm in diameter, showing triradial symmetry. Here we describe a new species from NENP

within the *Tribrachidium* genus: *Tribrachidium gehlingi* new species. This new species has three main arm-like structures that are slightly curved and do not reach the outer margin. There are three secondary arm-like structures that are approximately half of the length of the main arms and it is, overall, lower in relief.

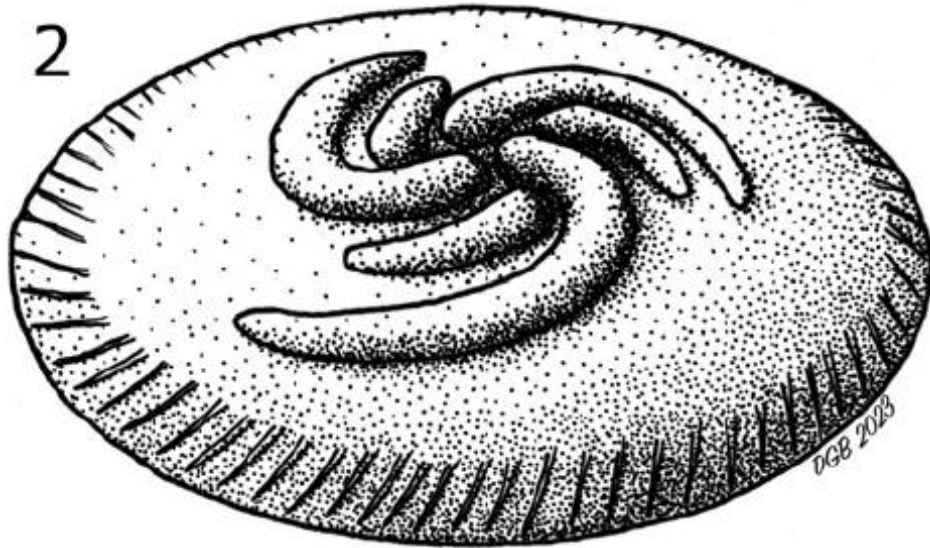
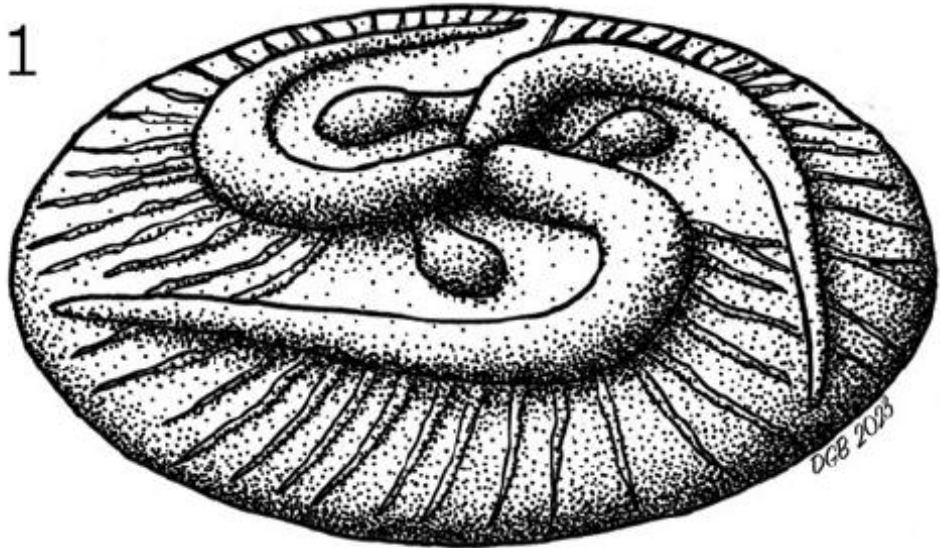
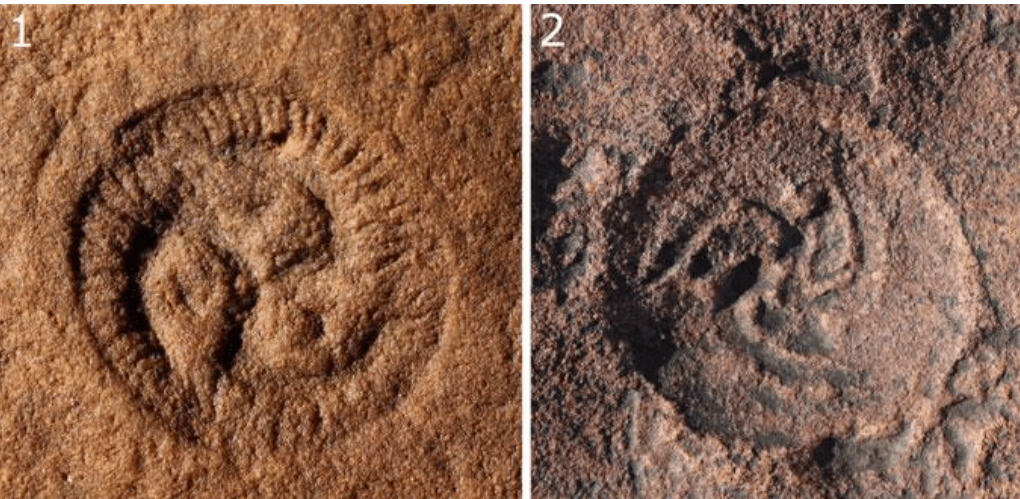
The process of burial and deformation are unlikely to be the cause of these morphological differences because both species co-occur within the same bedding horizon.

*Tribrachidium heraldicum* Glaessner in Glaessner and Daily, 1959 is a triradial Ediacaran organism found in abundance within the Ediacara Member of the Flinders Ranges, South Australia. *Tribrachidium gehlingi* n. sp. has low relief and three slightly curved, main arm-like structures that leave a conspicuous gap between the end of the arm-like structures and rim.

In place of the 'bulla' found on *T. heraldicum*, there are three secondary arm-like structures approximately half of the length of the main arm-like structures. Key morphological differences between the two species are statistically significantly different.

Additionally, the species occur together within the same fossiliferous event horizons, indicating that the observed morphological differences are unlikely a result of taphonomy.

[Images are from this paper.]



Reconstruction of (1) *Tribrachidium heraldicum* Glaessner in Glaessner and Daily, 1959 and (2) *Tribrachidium gehlingi* n. sp.

Myrow, P.M., et al (2024) **Tectonic trigger to the first major extinction of the Phanerozoic: The early Cambrian Sinsk event.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adl3452 (available as a free pdf)

[Between 514 megayears ago and 541 megayears, animal species radiated in great profusion as tectonic forces opened up new habitats. This sudden increase is called the Cambrian Explosion but it didn't happen in one smooth curve.]

Authors' abstract: *The Cambrian explosion, one of the most consequential biological revolutions in Earth history, occurred in two phases separated by the Sinsk event, the first major extinction of the Phanerozoic.*

*Trilobite fossil data show that Series 2 strata in the Ross Orogen, Antarctica, and Delamerian Orogen, Australia, record nearly identical and synchronous tectono-sedimentary shifts marking the Sinsk event.*

*These resulted from an abrupt pulse of contractional supracrustal deformation on both continents during the Pararaia janeae trilobite Zone.*

*The Sinsk event extinction was triggered by initial Ross/Delamerian supracrustal contraction along the edge of Gondwana, which caused a cascading series of geodynamic, paleoenvironmental, and biotic changes, including*

- (i) loss of shallow marine carbonate habitats along the Gondwanan margin;*
- (ii) tectonic transformation to extensional tectonics within the Gondwanan interior;*
- (iii) extrusion of the Kalkarindji large igneous province;*
- (iv) release of large volumes of volcanic gasses; and*
- (v) rapid climatic change, including incursions of marine anoxic waters and collapse of shallow marine ecosystems.*

Saleh, F., et al (2024) **The Cabrières Biota (France) provides insights into Ordovician polar ecosystems.** NATURE ECOLOGY AND EVOLUTION 8:doi.org/10.1038/s41559-024-02331-w (available as a free pdf)

Authors' abstract: *Early Palaeozoic sites with soft-tissue preservation are predominantly found in Cambrian rocks and tend to capture past tropical and temperate ecosystems.*

*In this study, we describe the diversity and preservation of the Cabrières Biota, a newly discovered Early Ordovician Lagerstätte from Montagne Noire, southern France.*

*The Cabrières Biota showcases a diverse polar assemblage of both biomineralized and soft-bodied organisms predominantly preserved in iron oxides.*

*Echinoderms are extremely scarce, while sponges and algae are abundantly represented. Non-biomineralized arthropod fragments are also preserved, along with faunal elements reminiscent of Cambrian Burgess Shale-type ecosystems, such as armoured lobopodians.*

*The taxonomic diversity observed in the Cabrières Biota mixes Early Ordovician Lagerstätten taxa with Cambrian forms. By potentially being the closest Lagerstätte to the South Pole, the Cabrières Biota probably served as a biotic refuge amid the high-water temperatures of the Early Ordovician, and shows comparable ecological structuring to modern polar communities.*

*Early Palaeozoic sites with soft-tissue preservation provide a wealth of information on the evolution of past life and enhance our understanding of previous ecosystems, but are unequally distributed in time and space.*

*While approximately 100 assemblages with soft-tissue preservation have been described from the Cambrian, around 30 are known from the Ordovician, and only a few Lagerstätten are discovered in Early Ordovician rocks.*

*The distribution of Early Palaeozoic Lagerstätten is also palaeogeographically skewed, as approximately 97% of discovered biotas represent tropical and temperate ecosystems within 65° north and south of the palaeoequator. This pattern is particularly true for the Ordovician, where very few Lagerstätten are known from polar environments.*

[Reconstruction on next page is from this paper.]





2023  
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**Dinosaurs.**

Mirarab, S., et al (2024) **A region of suppressed recombination misleads neoavian phylogenomics.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 121:doi.org/10.1073/pnas.2319506121 (available as a free pdf)

[Birds were the only dinosaurs to survive the asteroid impact 65 megayears ago, but this paper suggests the timing of their subsequent evolution may be misunderstood because some genes locked up and stopped evolving.]

Authors' abstract: *Genomes are typically mosaics of regions with different evolutionary histories. When speciation events are closely spaced in time, recombination makes the regions sharing the same history small, and the evolutionary history changes rapidly as we move along the genome.*

*When examining rapid radiations such as the early diversification of Neoaves 66 Mya, typically no consistent history is observed across segments exceeding kilobases of the genome. Here, we report an exception.*

*We found that a 21-megabase region in avian genomes, mapped to chicken chromosome 4, shows an extremely strong and discordance-free signal for a history different from that of the inferred species tree.*

*Such a strong discordance-free signal, indicative of suppressed recombination across many millions of base pairs, is not observed elsewhere in the genome for any deep avian relationships.*

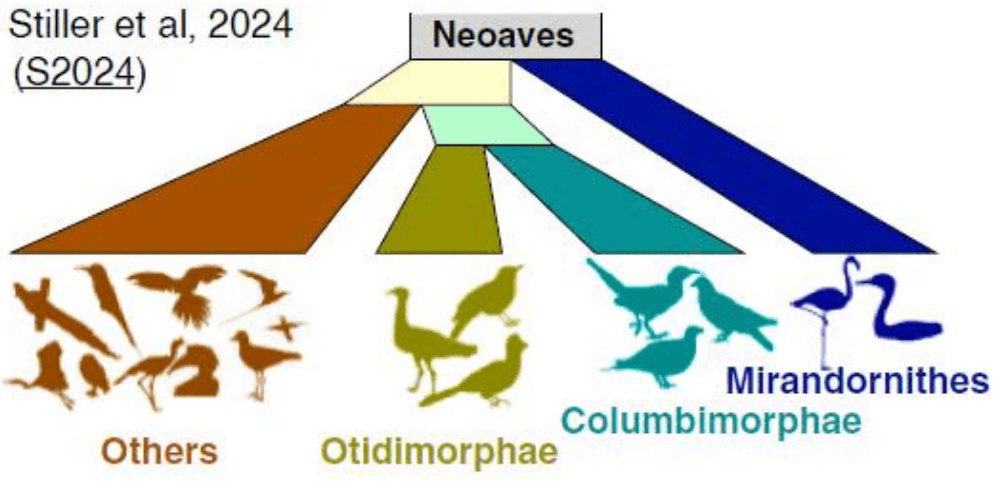
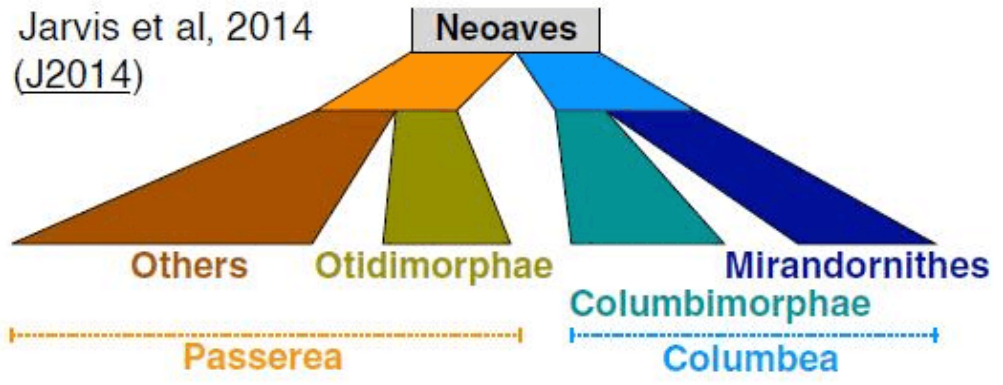
*Although long regions with suppressed recombination have been documented in recently diverged species, our results pertain to relationships dating circa 65 Mya.*

*We provide evidence that this strong signal may be due to an ancient rearrangement that blocked recombination and remained polymorphic for several million years prior to fixation.*

*We show that the presence of this region has misled previous phylogenomic efforts with lower taxon sampling, showing the interplay between taxon and locus sampling.*

*We predict that similar ancient rearrangements may confound phylogenetic analyses in other clades, pointing to a need for new analytical models that incorporate the possibility of such events.*

[Chart is from this paper.]



## Geology.

Lamb, Simon, and C.E.J. de Ronde (2024) **Large-scale submarine landslides in the Barberton Greenstone Belt, southern Africa: Evidence for subduction and great earthquakes in the Paleoproterozoic.** GEOLOGY 52:doi.org/10.1130/G51997.1

[Earthquakes are a product of plate tectonics. Therefore, ancient earthquake faults can help time when the continental plates began moving. The Paleoproterozoic was from 3.6 to 3.2 gigayears ago, when life first originated.]

Authors' abstract: *New mapping of the Barberton Greenstone Belt in South Africa shows that the central part is a pseudo-stratigraphy made of shallow-water and deep-water siliciclastic and volcanic slide blocks, with individual blocks ranging in size from tens of meters to >10 km in length.*

*The outcrop pattern and scale are remarkably similar to those of large-scale Miocene to recent submarine landslides in New Zealand along the active Hikurangi subduction zone that are periodically triggered by earthquakes on the subduction megathrust, providing evidence for megathrust earthquakes in the Paleoproterozoic.*

## Environmental Science.

Agnew, D.C. (2024) **A global timekeeping problem postponed by global warming.** NATURE 628:doi.org/10.1038/s41586-024-07170-0

Author's abstract: *The historical association of time with the rotation of Earth has meant that Coordinated Universal Time (UTC) closely follows this rotation. Because the rotation rate is not constant, UTC contains discontinuities (leap seconds), which complicates its use in computer networks.*

*Since 1972, all UTC discontinuities have required that a leap second be added. Here we show that increased melting of ice in Greenland and Antarctica, measured by satellite gravity, has decreased the angular velocity of Earth more rapidly than before.*

*Removing this effect from the observed angular velocity shows that since 1972, the angular velocity of the liquid core of Earth has been decreasing at a*

*constant rate that has steadily increased the angular velocity of the rest of the Earth. Extrapolating the trends for the core and other relevant phenomena to predict future Earth orientation shows that UTC as now defined will require a negative discontinuity by 2029.*

*This will pose an unprecedented problem for computer network timing and may require changes in UTC to be made earlier than is planned. If polar ice melting had not recently accelerated, this problem would occur 3 years earlier: global warming is already affecting global timekeeping.*

Junker, J., et al (2024) **Threat of mining to African great apes.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adl0335 (available as a free pdf)

Authors' abstract: *The rapid growth of clean energy technologies is driving a rising demand for critical minerals. In 2022 at the 15th Conference of the Parties to the Convention on Biological Diversity (COP15), seven major economies formed an alliance to enhance the sustainability of mining these essential decarbonization minerals.*

*However, there is a scarcity of studies assessing the threat of mining to global biodiversity. By integrating a global mining dataset with great ape density distribution, we estimated the number of African great apes that spatially coincided with industrial mining projects.*

*We show that up to one-third of Africa's great ape population faces mining-related risks. In West Africa in particular, numerous mining areas overlap with fragmented ape habitats, often in high-density ape regions.*

*For 97% of mining areas, no ape survey data are available, underscoring the importance of increased accessibility to environmental data within the mining sector to facilitate research into the complex interactions between mining, climate, biodiversity, and sustainability.*

Gillson, L., et al (2024) **Trees, carbon, and the psychology of landscapes.** TRENDS IN ECOLOGY AND EVOLUTION 39:doi.org/10.1016/j.tree.2023.11.008 (available as a free pdf)

Authors' abstract: *The narrative of landscape degradation is often applied without considering the history of the landscape. While some landscapes are undoubtedly deforested, others existed in open or mosaic states before human intervention, or have been deliberately maintained as such.*

*In psychology, a 'fundamental attribution error' is made when characteristics are attributed without consideration of context or circumstances. Afforestation has emerged as a major tool in climate mitigation, but plantations of non-native species can negatively affect biodiversity and ecosystem services.*

*Planting indigenous trees in areas that were formerly forested requires an understanding of landscape history over centennial-millennial timescales derived from palaeoecology.*

*Ancient open and mosaic ecosystems are particularly threatened by the global drive for tree planting, which is based on an assumption of degradation. Assumptions that open or mosaic landscapes are remnants of degraded forests is a type of attribution error that can be corrected through an understanding of landscape history.*

*Cultural landscape mosaics can also have benefits in terms of biodiversity and ecosystem services when compared with closed-canopy forests.*

Albano, P.G., et al (2024) **The dawn of the tropical Atlantic invasion into the Mediterranean Sea.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCE USA 121:doi.org/10.1073/pnas.2320687121

Authors' abstract: *Global warming and biological invasions are driving a major reconfiguration of biogeographic provinces. Past warm climate intervals in the Earth's history represent windows into how species responded to warming and can help in predicting future biogeographic configurations.*

*We modeled the suitability of the Mediterranean Sea to West African tropical species that occurred in the basin in the Last Interglacial (135 to 116 ka), and the connectivity along northwest Africa where a large upwelling system is*

*currently delaying the poleward range expansion of tropical species. We show that this barrier may weaken even under intermediate climate scenarios, contributing to the onset of a novel ecosystem in the entire Mediterranean, a process already started with the biological invasion through the Suez Canal.*

*The Mediterranean Sea is a marine biodiversity hotspot already affected by climate-driven biodiversity collapses. Its highly endemic fauna is at further risk if global warming triggers an invasion of tropical Atlantic species.*

*Here, we combine modern species occurrences with a unique paleorecord from the Last Interglacial (135 to 116 ka), a conservative analog of future climate, to model the future distribution of an exemplary subset of tropical West African mollusks, currently separated from the Mediterranean by cold upwelling off north-west Africa.*

*We show that, already under an intermediate climate scenario (RCP 4.5) by 2050, climatic connectivity along north-west Africa may allow tropical species to colonize a by then largely environmentally suitable Mediterranean.*

*The worst-case scenario RCP 8.5 leads to a fully tropicalized Mediterranean by 2100. The tropical Atlantic invasion will add to the ongoing Indo-Pacific invasion through the Suez Canal, irreversibly transforming the entire Mediterranean into a novel ecosystem unprecedented in human history.*

## **Human Prehistory.**

Kappelman, J., et al (2024) **Adaptive foraging behaviours in the Horn of Africa during Toba supereruption.** NATURE 628:doi.org/10.1038/s41586-024-07208-3

Authors' abstract: *Although modern humans left Africa multiple times over 100,000 years ago, those broadly ancestral to non-Africans dispersed less than 100,000 years ago.*

*Most models hold that these events occurred through green corridors created during humid periods because arid intervals constrained population movements.*

*Here we report an archaeological site, Shinfa-Metema 1, in the lowlands of northwest Ethiopia, with Youngest Toba Tuff cryptotephra dated to around 74,000 years ago, that provides early and rare evidence of intensive riverine-based foraging aided by the likely adoption of the bow and arrow.*

*The diet included a wide range of terrestrial and aquatic animals. Stable oxygen isotopes from fossil mammal teeth and ostrich eggshell show that the site was occupied during a period of high seasonal aridity.*

*The unusual abundance of fish suggests that capture occurred in the ever smaller and shallower waterholes of a seasonal river during a long dry season, revealing flexible adaptations to challenging climatic conditions during the Middle Stone Age.*

*Adaptive foraging along dry-season waterholes would have transformed seasonal rivers into 'blue highway' corridors, potentially facilitating an out-of-Africa dispersal and suggesting that the event was not restricted to times of humid climates.*

*The behavioural flexibility required to survive seasonally arid conditions in general, and the apparent short-term effects of the Toba supereruption in particular were probably key to the most recent dispersal and subsequent worldwide expansion of modern humans.*

Abbona, C.C., et al (2024) **Patagonian partnerships: the extinct *Dusicyon avus* and its interaction with prehistoric human communities.** ROYAL SOCIETY OPEN SCIENCE 11:doi.org/10.1098/rsos.231835 (available as a free pdf)

*Authors' abstract: The southern Mendoza province, located in the northern region of Patagonia, was inhabited by hunter-gatherer groups until historic times. Previous archaeological studies have reported canid remains among faunal assemblages, which were assumed to be part of the human diet.*

*However, the taxonomic identification and significance of these canids within human groups have raised questions. In this study, we used ancient DNA analysis, morphological examination and stable isotope analysis to re-evaluate the taxonomic assignment of a canid discovered at the Late Holocene burial site of Cañada Seca.*

*Previous morphological identifications suggested that it belonged to the genus *Lycalopex*, but our results conclusively demonstrate that the individual belongs to the extinct fox species *Dusicyon avus*.*

*This finding expands *Dusicyon avus*' known geographical distribution to Patagonia's northern extremity. Furthermore, statistical predictions based on genetic divergence undermine the hypothesis that hybridization between *Canis* and *Dusicyon*, facilitated by the introduction of domestic dogs, played a role in the extinction of *Dusicyon* species.*

*On the other hand, our findings indicate that a *Dusicyon avus* individual shared a similar diet and was probably buried alongside humans, suggesting a close relationship between the two species during their lives and deaths.*

*The presence of this fox outside its known distribution range expands our understanding of its geographical extent. The close association with human remains and shared dietary patterns suggests that this was a valuable individual, maybe even a companion or a pet for the hunter-gatherers during the late Holocene.*

*Moreover, this record of a co-burial extends previously recognized symbolic interactions between hunter-gatherers and *D. avus* during the Holocene. The evidence indicates that some specimens of this extinct fox were in synanthropy during the late Holocene.*

First Rider, D., et al (2024) **Genomic analyses correspond with deep persistence of peoples of Blackfoot Confederacy from glacial times.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adl6595 (available as a free pdf)

[Southern Alberta, including Calgary, is Treaty Seven land, which contains the Blackfoot Confederacy (Siksika, Piikani, Kainai), who are indigenous to the land, and the Tsuu T'ina (Na Dene) and Nakoda (Lakota), who are aboriginals but not indigenous to Treaty Seven, although they were indigenous to Yukon and Saskatchewan before migrating to Alberta.]

*Authors' abstract: We show that the genomics of sampled individuals from the Blackfoot Confederacy belong to a previously undescribed ancient lineage that diverged from other genomic lineages in the Americas in Late Pleistocene*

times. Using multiple complementary forms of knowledge, we provide a scenario for Blackfoot population history that fits with oral tradition and provides a plausible model for the evolutionary process of the peopling of the Americas.

## Modern Humans.

Kanaya, Y., and N. Kawai (2024) **Anger is eliminated with the disposal of a paper written because of provocation.** SCIENTIFIC REPORTS 14:doi.org/10.1038/s41598-024-57916-z (available as a free pdf)

Authors' abstract: *Anger suppression is important in our daily life, as its failure can sometimes lead to the breaking down of relationships in families. Thus, effective strategies to suppress or neutralise anger have been examined.*

*This study shows that physical disposal of a piece of paper containing one's written thoughts on the cause of a provocative event neutralises anger, while holding the paper did not.*

*In this study, participants wrote brief opinions about social problems and received a handwritten, insulting comment consisting of low evaluations about their composition from a confederate. Then, the participants wrote the cause and their thoughts about the provocative event.*

*Half of the participants (disposal group) disposed of the paper in the trash can (Experiment 1) or in the shredder (Experiment 2), while the other half (retention group) kept it in a file on the desk.*

*All the participants showed an increased subjective rating of anger after receiving the insulting feedback. However, the subjective anger for the disposal group decreased as low as the baseline period, while that of the retention group was still higher than that in the baseline period in both experiments. We propose this method as a powerful and simple way to eliminate anger.*

Speirs: This paper caught my eye because I read in Isaac Asimov's autobiography that he used a similar method. If he was angered by a bad review, he would pour all that anger into a letter, then seal, address, and stamp the letter.

He would then wait a day or two and tear up the letter instead of mailing it. He mentioned that it was important to put a postage stamp on the envelope to make the process work, and to destroy the stamp while tearing up the letter.

## Technology.

Mosleh, M., et al (2024) **Misinformation and harmful language are interconnected, rather than distinct, challenges.** PNAS NEXUS 3:doi.org/10.1093/pnasnexus/pgae111 (available as a free pdf)

Authors' abstract: *There is considerable concern about users posting misinformation and harmful language on social media. Substantial, yet largely distinct, bodies of research have studied these two kinds of problematic content. Here, we shed light on both research streams by examining the relationship between the sharing of misinformation and the use of harmful language.*

*We do so by creating and analyzing a dataset of 8,687,758 posts from  $N = 6,832$  Twitter (now called X) users, and a dataset of  $N = 14,617$  true and false headlines from professional fact-checking websites. Our analyses reveal substantial positive associations between misinformation and harmful language.*

*On average, Twitter posts containing links to lower-quality news outlets also contain more harmful language; and false headlines contain more harmful language than true headlines. Additionally, Twitter users who share links to lower-quality news sources also use more harmful language, even in non-news posts that are unrelated to (mis)information.*

*These consistent findings across different datasets and levels of analysis suggest that misinformation and harmful language are related in important ways, rather than being distinct phenomena.*

*At the same, however, the strength of associations is not sufficiently high to make the presence of harmful language a useful diagnostic for information quality: most low-quality information does not contain harmful language, and a considerable fraction of high-quality information does contain harmful language. Overall, our results underscore important opportunities to integrate these largely disconnected strands of research and understand their psychological connections.*