

OPUNTIA
575



Summer Solstice 2024

Opuntia is published by Dale Speirs, Calgary, Alberta. It is posted on www.efanzines.com and www.fanac.org. There is also an cumulative subject index to all issues available at those sites. My e-mail address is: opuntia57@hotmail.com When sending me an emailed letter of comment, please include your name and town in the message.

ABOUT THE COVER

2024-06-20

photos by Dale Speirs

I had some business on the south side of Glenmore Reservoir and took a few moments to walk over to the shoreline to admire the view. The cover photo and below were taken looking north.

Calgary so far had a mild rainy season. Showers every afternoon but mostly sunny, although I had to wear a light jacket because of the chilly winds.

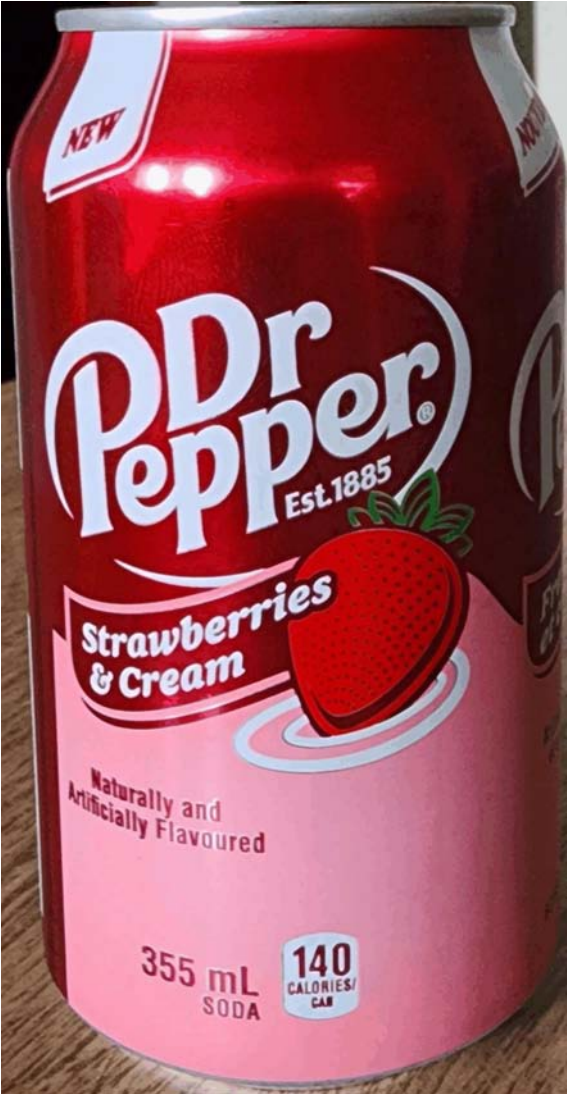


WORLD WIDE PARTY #31

by Dale Speirs

Founded by Benoit Girard (Quebec) and Franz Miklis (Austria) in 1994, the World Wide Party is held on June 21st every year. At 21h00 local time, the idea is to raise a glass and toast fellow members of zinedom around the world. The purpose is to get a wave of fellowship circling the planet.

At 21h00, I faced to the east and saluted those, if any, who had already celebrated. I next faced north, then south, and toasted those in my time zone who might have been celebrating as I did. Finally, I faced west and raised a glass to those who would celebrate WWP in the next hour.



I am a teetotaler, so my traditional libation has been soda pop.

Dr Pepper came out with a Strawberries and Cream flavour which I like very much, so that was what I used.

SINGLE POINT FAILURE MODE

by Dale Speirs

Nor Any Drop To Drink.

Just a diary of events in Calgary, beginning the morning of June 6. Every Calgarian woke up with a text alert that the previous evening a major water main break had occurred. The 2-metre-diameter line was in northwest Calgary and carried 60% of the drinking water supply for Calgary and surrounding towns, about 2 million people altogether.

The City declared a Stage 4 alert, the maximum response in a disaster. For Cowtowners, that meant all outside watering was prohibited, whether lawns, gardens, window washing, or sidewalk washing.

Restaurants and homeowners were ordered to minimize their water usage for the next few days and postpone laundry. Outdoor fire pit bans were declared because the Fire Dept might not have water available.

Where the water bubbles up is not necessarily where the leak is. Water will flow horizontally underground until it reaches the lowest point and accumulates, breaking up to the surface. Waterworks crews located the leak on Saturday, June 8. It was then announced that repairs would take five to seven days.

Calgarians responded just as they did during the Great Toilet Paper Panic amidst the COVID-19 pandemic. Every man for himself and the Devil takes the hindmost. June 8 saw a rush to the supermarkets for flats of bottled water.

EMERGENCY ALERT / ALERTE D'URGENCE

This is an Alberta Emergency Alert. The City of Calgary has issued a critical water supply alert. This alert is in effect for the city of Calgary until further notice. A water main break along 16 Avenue NW has impacted the city's water supply. Supply levels have reached a critical state, affecting the city's ability to provide water to communities and ensure adequate water is available to support emergency fire suppression. All residents and businesses must conserve water. Do not shower or bath. Do not wash dishes, or run appliances that use water.

OK



However, to be fair, the City announced that voluntary conservation had reduced water consumption from 650 million litres daily down to 440 million litres by June 8. The remaining water treatment plant at Glenmore Reservoir was able to just keep up.

These photos from the City of Calgary show the break after the water was shut off and the area drained. Fortunately for the shopping plaza, the flood waters drained away from them, off to the lower right of the drone photo. The flood crossed athletic fields, then across the bank and into the Bow River. The blue lagoon was pumped dry over a day and by June 10 the repairs had begun.



It Never Rains But It Pours.

Alas, on Wednesday night, June 12, two workers were injured seriously enough to require transportation to hospital. This shut down the repairs while Alberta Occupational Health and Safety officials investigated. Meanwhile, the reservoirs kept going down and down.



The Calgary Fire Dept still had house fires to respond. The City mentioned that a fully-involved fire would use 600,000 to 1.5 million litres for an average house fire.

My monthly water bill is measured in cubic metres. I never water my lawn and only use about 4 cubic metres a month. There are 1,000 litres in a cubic metre, so I use 4,000 litres per month. The current rate is \$1.464 per cubic metre.

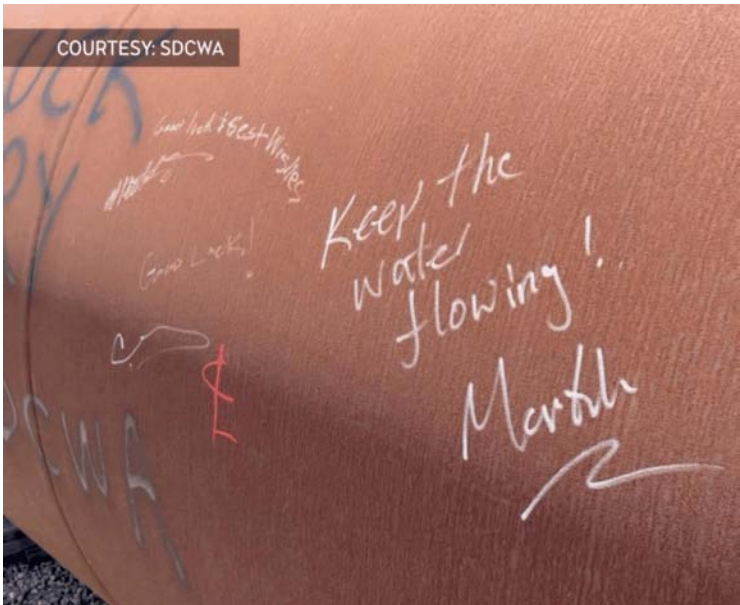
The City website reported that average daily residential consumption was 170 litres per person, which works out to 5.1 cubic metres per month. The Canadian average is 220 litres per day residential.

Things Got Bad And Things Got Worse, I Guess You Know The Tune.

After work resumed following the accident, robots were sent up and down the line and found five more points of potential failure. The line was built in 1975 and was supposed to last 100 years. On June 14, City officials said another three to five weeks were needed to complete repairs. That would bring us to the start of the Stampede rodeo.

On Saturday morning, June 15, Mayor Jyoti Gondek finally got around to declaring a state of emergency. Rain negated the need for outdoor watering but Calgarians were using too much water, 480 million litres per day. The reservoirs were slowly draining.

You can't buy 2-metre pipe out of just any contractor's storage yard, so the City was chasing pipe as far afield as the San Diego County Water Authority in California. They were kind enough to ship some of their spare pipe and posted the following photographs. So for any reader of this zine who lives there, a tip of the cowboy hat to you. Much obliged, pardner.



Sunday morning, June 16, the City announced that water consumption had fallen to 438 million litres, much better than before, and low enough to preserve some water in the reservoirs across Calgary. But there were still many days to go, making the time reminiscent of the pandemic when we were waiting for the vaccines.

The provincial Ministry of the Environment issued the City of Calgary an emergency permit to withdraw raw water from the Bow and Elbow Rivers. Under law, commercial contractors cannot take water from rivers or lakes, although farmers and homeowners can. The permit allowed the City to assign water rights to contractors who needed water for concrete pours and hand-watering newly-planted trees.

The Calgary Stampede rodeo uses large quantities of water to wet down the chuckwagon race track and infield events. The earliest estimate was that water main repairs would be completed by July 5, which is Parade Day and the first day of the rodeo. They too would use the permit to ameliorate their operations.

There was no question about canceling the Stampede. 1.4 million paid visitors and \$280 million in economic activity such as hotels and tourism meant that the event would go no matter what.

After the great flood of June 21, 2013, the Stampede, on the banks of the Elbow River, did a massive cleanup and managed to open with most events intact. The slogan at the time was "Come Hell or high water". This time around the slogan is "Come Hell or no water".

AROUND COWTOWN

photos by Dale Speirs

As I strolled down Stephen Avenue pedestrian mall in downtown Calgary on June 14 during the lunch hour, I spied a gang of women towing a fire truck. Some sort of corporate challenge.

An announcer said the team pulled the truck 50 metres in 13 seconds. I meandered on my way as another team roped up for their turn.



GROUND CONTROL TO MAJOR TOM: PART 6

by Dale Speirs

[Parts 1 to 5 appeared in OPUNTIA's #396, 405, 453, 460, and 488.]

Before Rockets.

Few people realize how little was known about the vacuum of outer space and the upper atmosphere until the 1960s. Science fiction writers could and did hypothesize all sorts of weird stuff in the upper atmosphere where balloonists struggled to go.

“Cosmic Fever” by A.R. Long (1937 February, ASTOUNDING, available as a free pdf from www.archive.org) was about high-altitude ballooning in a decade when stratospherists were the equivalent of astronauts in the 1960s. Something kept burning up balloons and their instrument packages as they reached the top of the stratosphere.

The hero Pat Marsh found out why when he went up in a manned balloon. Even though the instruments registered -134°F, Marsh was overheated in the gondola and had to bail out. He had found the answer though, as the gondola was overheated by cosmic rays.

As it happened, the upper layers of the atmosphere, above any balloon altitude, are indeed heated by radiation. This was a cutting-edge story but now outdated, much like the cyberpunk stories of the 1990s when giant computers had 100 megabytes of disk space.

“Reaching For The Moon” by S.A. Lombino (1951 November, SCIENCE FICTION QUARTERLY, available as a free pdf from <https://gutenberg.org>) was a one-trick pony story. An engineer was pleading for money to build his Moon rocket and enable humans to set foot there.

The potential backers refused, citing the fact that the country had just come through two major wars and was now fighting another. Note the date of publication. The reader, and I admit I was one, will assume they were referring to the two world wars and the Korean conflict.

The engineer failed to get the money. The money men left. The story concluded with a twist.

Slowly he rose and brushed a thin hand over his wet eyes. There was work to be done, and tomorrow was another day. He walked to the door leading to his inner laboratory and paused.

It was past midnight, and being a punctilious person, Saunders ripped the day's page from the calendar, exposing the new day to view. The new day was September 21st, the year 3951.

A Failure To Lift Off.

The premise in science fiction at the time was that square-jawed heroes would struggle to get a rocket into space but would overcome all obstacles and ultimately succeed. There were a few pessimistic stories but the literature at the time generally assumed that an American would be first in space.

ROCKY FORTUNE aired for the 1953-54 season. Writers were George Lefferts and Ernest Kinoy. The scripts were untitled, as a result of which many episodes circulate under multiple titles. Available as free downloads from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

Frank Sinatra played the hero Rocky Fortune, born Rocko Fortunato, as was specifically mentioned in the second episode. The character was an odd-job man, sent out by his employment agency to a different and strange job each week.

“Rocket Racket” aired on 1954-03-23. Rocky Fortune's latest job offer came from the Zenith Foundation. “*Experimental work, highly dangerous*”, the job ticket said. Not surprisingly they wanted someone without dependents.

The posting was in Utah, where they flew Fortune. The plane landed in the middle of the desert where a castle-sized mansion loomed. The head henchman was Milton (surname) working for Col. Sam Jones, oilman and nutcase. The other staff included Prof. Herman Von Bruch and Jones' secretary Helen Crandall.

Jones explained he was a great fan of them thar science fiction magazines. “*Dimension X*” added Fortune loyally, a reference to the radio series airing on that same network. From there it was not a long march to Jones' own space programme.

They needed a test pilot. Guess who? The Colonel's Lady, as the rocketship was named, operated automatically. Notwithstanding that, Jones wanted someone in the cockpit for the experiment.

Fortune tried to warn Jones the rocketship was a fraud. He made a run for it while wearing a spacesuit but the old desert prospector who found him thought he was a Martian. That contretemps was straightened out but Milton and the Professor put Fortune back into the rocket.

For a second time, Fortune escaped, leaving Milton unconscious in the rocketship. The thing blew up on the launch pad. A swindle, built out of junk parts and never meant to fly. Milton and the Professor had charged Jones top dollar for scrap metal.

Moondust.

“The Death Dust” aired on 1968-03-22 and was an episode of the South African radio series SF 68. Available as free downloads from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

The episode was based on a 1959 story by Frank Harvey. The plot was about the first astronauts to the Moon. Note that this episode aired a year before Apollo 11 landed.

In the 1950s, there was a legitimate concern that the Moon might be covered with a deep layer of dust that would swallow up a landing spacecraft. Not until the 1960s did unmanned landers demonstrate that the Moon's surface was hard enough to support a spacecraft.

Harvey's 1959 story was followed by Arthur C. Clarke's 1961 novel A FALL OF MOONDUST. That story allowed for colonization of the Moon. A surface craft skimmed across a crater filled with dust. An accident caused the ship to sink under the dust with dire consequences.

There was a second concern which was addressed by Harvey. Many wondered if Moon dust might carry some sort of pathogen that couldn't be detected by unmanned landers. That was why the returned Apollo 11 astronauts were briefly quarantined.

Harvey's story postulated that lunar dust was indeed pathogenic. It caused a hemorrhagic infection in the astronauts. The lone survivor headed back to Earth thinking he could be quarantined.

He realized too late that the outside of his spacecraft was covered in dust. Instead of turning the spacecraft around and firing the rockets to slow down for re-entry, he kept the nose forward, fired the rockets to boost the speed, and dived in at a steep angle. All the better to burn up the spacecraft and destroy the dust.

“Stay Off The Moon!” by Raymond F. Jones (1962 December, AMAZING STORIES, available as a free download from <https://gutenberg.org>) was about the first robot probe sent to the Moon. The Prospector, as the rover was called, made a successful landing.

The first test of its onboard chemical laboratory produced anomalous results. Everything was abnormal. One scientist promulgated the view that moondust was lethal. A laser drill penetrated deep down.

Inside of magmatic hard rock, there were carbonates and hydrocarbons. Organic substances appeared further down, signs of living tissues. A makeshift electroencephalograph was cobbled together by remote control.

With another hand-waving device, they concluded the Moon contained a giant evil entity inside a shell. They woke it up. The government high command didn't believe the data and suppressed everything, including the scientists.

The years passed. The Apollo astronauts landed, then were swallowed up by a sudden crevasse. The Moon began slowly changing colour to orange. On that note, the story ended with forebodings of what was to come.

COZY MYSTERIES: PART 16

by Dale Speirs

[Parts 1 to 15 appeared in OPUNTIA #361, 379, 395, 398, 400, 420, 423, 443, 445, 449, 466, 482, 525, 547, and 560.]

Cozy mysteries had their origin with the Miss Marple stories but the modern versions are American. These days, cozies involve a middle-aged woman who had her own business in a village. She tripped over fresh corpses at least once per novel and often more.

Why do I read them? Well, they are mostly set in rural villages. I grew up in the cattle country of west-central Alberta and know real village life quite well. No Miss Marples out there, so I read these books as light comedy.

Jessica.

There is only one Jessica of course. Jessica Fletcher was the protagonist of MURDER, SHE WROTE, a television mystery series from 1984 to 1997. Although the show is long gone, novels were published long after, bylined as “Jessica Fletcher and [name of ghostwriter]”.

Fletcher lived in Cabot Cove, Maine, population 3,560, where most of the early murders were concentrated. Fans of the show calculated the town’s murder rate was 149 per 100,000 on a per capita basis, which made the place the murder capital of the world. In later episodes and novels, she went traveling so as to spread the murders around. People were talking in Cabot Cove, you know.

BLOOD ON THE VINE (2001) by Jessica Fletcher and Donald Bain took the mayhem to Napa Valley in California. If the wine country was ever laid back and relaxed, it wasn’t after Fletcher arrived to research her next novel.

The death toll began with a waiter at a restaurant owned by Bill Ladington, who himself did not long survive his servant. Fletcher and her boyfriend Scotland Yard detective George Sutherland had an abundance of suspects to sort through.

The vineyard owners were in an uproar over a choice piece of land available for expansion. The Ladington family, including the young widow, were disputatious. Bill had gotten his daughter-in-law pregnant, which was only part of the mess. The best of families and all that.

The J’accuse! meeting was held in the Ladington restaurant, which seemed a bit public. When the police barged in and made arrests, *Everyone in the dining room was stunned into silence.*

No kidding. This novel was published before smartphones became common, otherwise the crowd would have been holding up their devices to video the scenes for YouTube or Tik Tok.

The son had killed his father. As an afterthought, the epilogue mentioned the waiter had been killed in a dispute with a drug dealer. The waiter had been using his job to deliver narcotics.

DYING TO RETIRE (2004) by Jessica Fletcher and Donald Bain took the heroine and Dr Seth Hazlitt to Florida for the funeral of Portia Shelby. She had previously lived in Cabot Cove, somehow surviving there only to be offed in sunny Florida.

Supposedly she had died of natural causes. Fletcher and Hazlitt barged into her apartment where they found some of the pills she was taking were highly inappropriate for her condition, and probably caused her death.

Hazlitt took the pills for further enquiries. To keep count, that was one charge of criminal trespass and one count of interfering with a police investigation. There were several suspects: a real estate developer, a bickering neighbour, a restaurateur, and Portia’s husband Clarence.

Fletcher and Hazlitt didn’t do their sleuthing by themselves. They were assisted by a group of retirees with too much time on their hands, a veritable swarm of Fletchers. They spread out like an invasion of army ants.

Clarence was quite a catch now that he was a widower. Young but just a touch of grey hair. Said one resident: *He’s nice looking and he still drives.* Fletcher and Hazlitt wove their way through the elderly cliques. Gossip and backbiting everywhere: *It’s like high school all over again.*

The denouement was tangled. Accessories before the fact helped the killer, who was then assisted by Accessories after the fact. The murderer had a Ponzi scheme going among the retirees. Surprisingly the Fletcherites, if I can call them that, were not run in for contaminating evidence or criminal trespass.

A VOTE FOR MURDER (2005) by Jessica Fletcher and Donald Bain was set in Washington, D.C., a place where more murder magnets should abide. But you can't have everything, so Jessica Fletcher went there to fill in the gap.

She was taking part in a literacy initiative. She attended a function at the White House with the President in attendance. Surprisingly, no one died. That lacunae was soon to be filled.

Maine senator Warren Nebel, who should have known better, foolishly invited Fletcher to a party at his house. His aide Nikki Farlow was found dead at the foot of some stairs. Her death was deemed accidental but since there were still 21 chapters to go, the reader will know better.

Nebel and his wife had a shaky marriage, he was under pressure regarding a proposed nuclear reactor near Cabot Cove, and other assorted scandals abounded. The traditional alarums came and went before Fletcher staged a J'accuse! meeting in the penultimate chapter.

Farlow had threatened to expose some sharp practices regarding the nuclear power plant, as a result of which someone silenced her. About half those present at the meeting were guilty. One to order the hit, one to do it, and the rest to either cover up the affair or try blackmail.

Museum Murders Now On Exhibit.

Sheila Connolly wrote a series of cozy novels about Nell Pratt of Philadelphia, Pennsylvania. Nell was the president of the Pennsylvania Antiquarian Society and part-time Miss Marple. Her boyfriend was FBI agent James Morrison.

RAZING THE DEAD (2014) began with Nell Pratt visiting a dairy farm at the request of a local developer. He wanted to ensure there were no archaeological sites that would disrupt construction.

What did disrupt the project was the discovery of the body of George Bowen. He was a local amateur historian and a zoning official for the municipality. Nell and James Morrison went sleuthing, she unofficially and he as FBI.

Assorted back stories were dug up and not just figuratively. The land may have been a burial site for Revolutionary War soldiers from both sides. In the present, Bowen's wife was having an affair, and the previous owner of the farm

had accidentally shot dead his brother. No final confrontations, as seems to be standard in Connolly novels. Just the murderer committing suicide from guilt. The motive was that Bowen would have exposed, however inadvertently, the brother's death.

PRIVY TO THE DEAD (2015) was the next novel in the series. The Pennsylvania Antiquarian Society building was being renovated. A construction worker dug up a curious object in the basement, then died a short time later in a car-pedestrian accident.

Bits and pieces of antiquities surfacing kept Nell Pratt and James Morrison busy. They were trying to not only reassemble a physical puzzle but a homicide puzzle. Alarums, shootings, and social feuds were uncovered with lots of old family histories that descendants wished to keep anonymous.

The dead man found something the descendants would kill for but who never knew about it. The death was in fact accidental, serving only as a catalyst to expose a slice of Philadelphia social history.

THE GAME IS A FOOTNOTE (2023) by Vicki Delany was the eighth novel in a cozy series about Gemma Doyle and Jayne Wilson of West London, Massachusetts. They were business partners in the Sherlock Holmes Bookshop when not Marpleing on the side.

A local museum called the Scarlet House, after the family that built it, had problems with objects moving about on their own, as if a poltergeist was resident. The directors called in Gemma and Jayne as consultants, based on their track record of solving murders. They did not disappoint and quickly found a fresh corpse.

The deceased was Dave Chase, a farmhand who looked after the livestock in Ye Olde Barn next to Ye Olde Museum. Gemma and Jayne had lots of sleuthing, what with questions about the museum's finances, several characters lurking about suspiciously, and just plain questions.

Worse yet, the bookshop cat Moriarty ate something that sent him to the veterinarian. Assorted alarums followed, with and without farm animals. A MacGuffin suddenly appeared, a valuable piece of jewelry hidden in Scarlet House. The culprits had been searching for it and Chase got in their way.

The denouement was the traditional gunpoint confrontation but the would-be killer was stymied when a little old lady stabbed him with a knitting needle. She was a feisty old broad.

Shopkeeping Cozies.

A FLICKER OF A DOUBT (2023) by Daryl Wood Gerber was the fourth novel in a cozy series about Courtney Kelly of Carmel-by-the-Sea, California. She operated a shop that specialized in miniature fairy gardens, whether table centrepieces or backyard ornaments. She had real fairies in her shop, although she didn't advertise that fact.

The plot began rolling when Courtney catered a benefit on the estate of Violet Vickers. Twas there that she ill met Nicolas Buley, ex-boyfriend of her friend Meaghan Brownie (not a fairy despite her surname). The two ex-lovers had a public spat. Not long after, Nicolas's body was found in Meaghan's back yard, bludgeoned to death with one of her sturdier artworks.

Courtney went into Marple mode, dredging up a plethora of motives and red herrings. The fairies helped her from time to time. She trapped herself with the killer in the final confrontation. For once, common sense ruled in a cozy. Courtney knew how to fight and took out the murderer with roundhouse kicks. The fairies tied up the culprit once she got him down.

Strangely, the book ended with a recipes appendix. There was a tea house next to Courtney's shop. When this series began, she had been more involved with the café but had since drifted into the fairy garden business.

Starting off was Cashew Tea Cookies. Then followed Cinnamon Coffee Cake, Chocolate Coconut Muffins, Dark Chocolate Chai Cookies, Double-Chocolate Caramel Brownies, Earl Grey Shortbread Cookies, Lemon Butter Cookies, Maple Madeleines, Meat Loaf Pie, and Nutty Blonde Brownies. I've read food cozies that didn't have as many recipes. But enjoy and forget about your diet.

Innkeeper Cozies.

DEADLY SUMMER NIGHTS (2021) by Vicki Delany was the first novel of a cozy series about Elizabeth Grady of Haggerman's Catskills Resort, New York State. The year was 1953 and Elizabeth was helping her mother Olivia operate the place.

Business was slow because in the postwar era the Catskills fell out of favour with tourists. Most of the hundreds of hotels had closed and the remaining resorts were struggling.

The job wasn't easy, what with difficult guests and staff troubles. The most difficult guest was a man found floating in the lake. When the police searched his cabin, they found numerous Communist documents and books. This was at the height of the Red Scare, so Elizabeth and Olivia scrambled to protect the reputation of the hotel.

Elizabeth went Marpleing but spent much of her time dealing with the guests, every one of whom seemed determined not to have fun. One guest was indignant because a squirrel ran along the outside window ledge of her room. Another wanted to censor the stand-up comedian.

The final confrontation took place out on the lake in canoes and rowboats. The murderer had acted for family reasons. He was brought to justice by police paddling furiously across the water.

Just Plain Nosy.

BIRDER, SHE WROTE (2023) by Donna Andrews was the umpteenth novel in a cozy series about Meg Langslow of Caerphilly, Virginia. She was the resident Miss Marple when not trying to control the chaos around her.

Her father wanted to install a beehive in her back yard. She had trouble with NIMBYites who built McMansions next to farms, then harassed them for normal farming activities. That got my attention, having grown up on a cattle ranch adjacent to a city.

Meg's grandmother was being trailed by a magazine reporter specializing in exposés. The action really began moving when someone found a body in a cemetery that hadn't been buried.

The killer was a blackmailer who went into reportage as a good cover. After the exposure and arrest, the good news came. The bees were finally installed and were humming away. The NIMBYs were put in their place. All was well for creatures great and small, not to mention solving the case.

LITERA SCRIPTA MORTEM: PART 10

by Dale Speirs

[Parts 1 to 9 appeared in OPUNTIA's #424, 428, 440, 469, 505, 513, 515, 533, and 549.]

Bookselling On The Air.

The old-time radio series BULLDOG DRUMMOND was based on the novels by H.C. McNeile. There was little continuity between the books, the movies, and the radio series. The novels and movies were set in Britain where Hugh Drummond was some sort of police detective.

In the books, he was a married man, in the movies he was forever affianced, and in the radio series he was a loner. The movies were played as comedy and the radio series as grim action-adventure.

The radio series soon moved Drummond to the USA. He roamed the country as a paladin with no visible source of income and unspecified police powers, assisted by his valet Denny, a blithering idiot.

The radio series aired from 1941 to 1954. The episodes were mediocre, worth listening to once and then forgotten. Available as free downloads from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

“The Bookstore”, also circulating as “Murder Leaves A Lonely Trail”, aired on radio on 1947-12-24, no writer credited. The episode began when a sudden thunderstorm sent Captain Hugh Drummond scurrying for shelter into a bookstore.

A young woman asked Drummond to put his arms around her and kiss her so a passing man wouldn't see her face. After he passed, she pointed a gun at Drummond and told him to get a book called “The Lonely Trail”.

The book seemed ordinary, with nothing between the pages when they were riffled. Another customer came up and chatted, pointing a gun. The woman had disappeared. The gunman told Drummond to walk ahead of him out the store.

Drummond was taken to a room and beaten unconscious. He woke up in a taxi with the gunman, who was now dead. The driver, under the impression the two were drunks, said a man paid him to haul them away.

All else being equal, Drummond gave his address to the driver. Denny was surprised to see the corpse. He said there was a young woman waiting for Drummond. Yes, it was her, named Jean Altman.

She said she was being blackmailed. The drop was in the book. A Treasury agent named Wilson then showed up, saying he had followed her on suspicion of being part of a counterfeiting gang. She pulled her gun again and escaped with the book. The wrong book.

Wilson chased after her. Meanwhile, back at the bookstore, Drummond and Denny learned the book was part of a circulating library. The proprietor said the book had last been borrowed by John Diamond.

They left for Diamond's place. As soon as they were out the door, the proprietor dialed telephoned a colleague and told her to take care of Diamond pronto. By the time they got there he was dead, gone out a fourth-floor window.

Dead men can't complain, so Drummond and Denny rummaged through his apartment. They found some photographic equipment. Drummond riffled the book he was still carrying and found a coded paper hidden in the endpapers.

The code was based on the book. The message concerned a rendezvous with Altman and her husband at the docks. Wilson showed up in the nick of time and took them away.

Wilson was in fact a co-conspirator named Matthews in a diamond smuggling ring. He had killed the real Wilson, that body Drummond had woken up with in the taxi, and assumed his identity.

Instead of immediately killing the Altmans, Matthews bwah-ha!-ha!-ed long enough for Drummond and Denny to burst in and take all three into custody. Drummond then bwah-ha!-ha!-ed at length in his turn, explaining the loose threads. Nobody else burst in, so the trio had to go to jail.



The bookstore took priority for Janet because the tourist season was in full swing but she did get in some Marpleing. So did the police, who eventually took Clark for the murder. He had a past history, including the suspicious death of his wife years ago.

However, the actual culprit was Derek Spiers, with an “ie”, not “ei” like me and my kin. Needless to say, I sat up at that revelation. My father’s ancestors came to Canada in the early 1830s from the village of Houston, Scotland.

The denouement was not the usual gun-pointing climax. Rather, Janet talked to Derek trying to stop him from jumping off a cliff.

ARGYLES AND ARSENIC (2022) was the next book in the series. Janet Marsh and her co-worker Christine Robertson were hosting a knitting competition in the bookstore. The contest was called “Rocking The Stocking”. Janet had to admit that wasn’t much of a crowd pleaser.

Meanwhile, up at the manor, 93-year-old Violet MacAskill decided the time had come to declutter the big house. She held a decluttering party attended by the villagers en masse, including the two Miss Marples.

Among other guests was Wendy Erksine, director of the local museum. She did not survive the party. Was the cause accidental food poisoning or rat poison? The local constable’s grandmother was one of the suspects, so he asked Janet and Christine for help.

The museum had just opened an exhibit curated by the deceased on the history of knitting in Scotland. More than just argyle socks. Las Vegas could never top that. Janet and Christine went Marpleing around town and the museum.

One of the clues was an old scrapbook with newspaper cuttings of arsenic poisoning cases. The question was who had compiled the book and why. Fatal and near-fatal alarms followed at regular intervals, plus numerous back stories.

The denouement began at the Supper With A Knitting Superstar, then moved to a car chase through the glen. The culprit was upset at Violet’s decluttering because she wanted the entire inheritance. There was some ambiguity in the ending, enough to carry forward into a sequel.

Bookselling can be hazardous. As I strolled out one day in May across the pedestrian skywalk system of Calgary, I spotted this Amazon van in distress.

Bookselling By The Page.

HEATHER AND HOMICIDE (2020) by Molly MacRae was the fourth novel of a cozy series about Janet Marsh of Inversgail, Scotland. She worked in a bookstore called Yon Bonnie Books and, along with some of her co-workers, Marpled as the occasion demanded.

True-crime author Heather Kilbride arrived in town to do some sleuthing, arousing the suspicions of the constabulary and all the Misses Marple in the bookstore and the book club.

Firstly, Kilbride staged a fake murder with a dummy dressed like her. Secondly, she was murdered for real. Found in her hand was a rare miniature book from the collection of suspect William Clark.

BOUND BY MURDER (2022) by Laura Gail Black (pseudonym of Laura Stone) was a novel in a cozy series about Jenna Quinn of Hokes Folly, North Carolina. She operated a bookstore ostensibly antiquarian, but as the story began she was unboxing a shipment of a bestseller wedding planner, 200 copies worth.

Her ex-fiancé Blake Emerson walked into the store with his bride-to-be Missy Plott. She bought a copy of the planner. Missy was a bridezilla. The surprise wasn't that she was murdered but that she survived as far as Chapter 9.

In the following chapter, her body was found by Jenna in a dumpster behind her bookstore. A time-honoured tradition in cozies is a corpse found in the alley behind Miss Marple's store, a thing that happens often enough in such novels as to be a cliché. The police then suspect her on the grounds that whoever had it last is responsible.

In this case though, Blake was the prime suspect. There were a tangle of romantic and family relationships for Jenna to uncover during her sleuthing. As a side plot, a group of fanatics were harassing her store on the grounds that she was a murder magnet. Fair enough, although their vandalism tactics were unconscionable.

Other alarms proliferated. In the denouement, the murderer had killed Missy accidentally. Blake was innocent of that crime but had a spotted past of interest to the police. But the books sold well.

Mysterious Books.

BLACKSTONE, THE MAGIC DETECTIVE was an old-time radio series that aired from 1948 to 1950. There were 79 episodes, written by Walter B. Gibson and Nancy Webb. Available as free mp3s from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

The character was based on a real magician Harry Blackstone Sr, although the plots weren't. Rhoda Brent played his assistant. The episodes were 15 minutes with commercials, which were edited out in the mp3s, reducing them to about 12 minutes each.

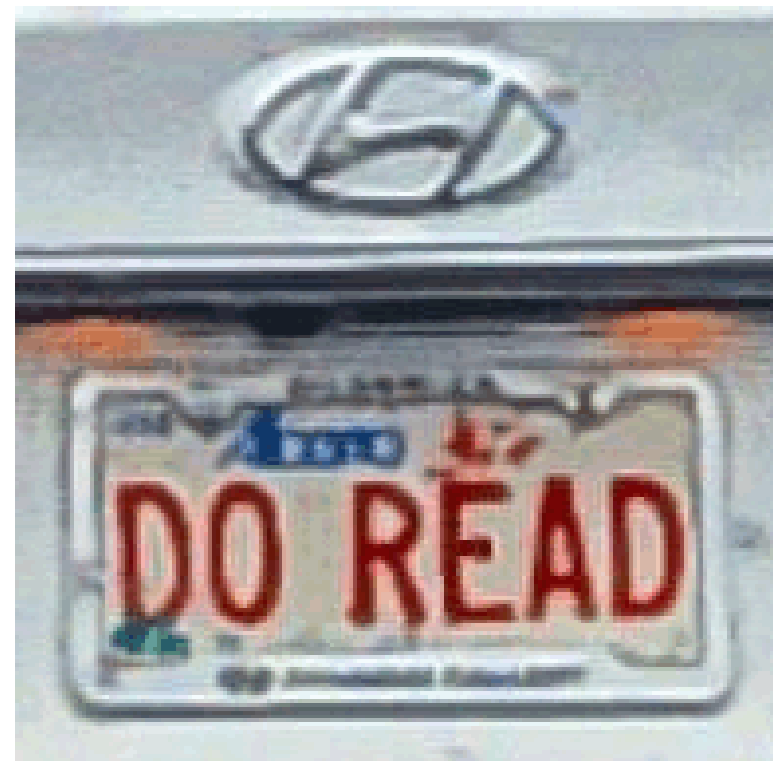
"The Locked Book" aired on 1949-04-03. The Book Of The Future came from an unnamed southeast Asian country where Blackstone and Rhoda were

traveling. The ruler was worried about hegemonists trying to take over his kingdom and convert it into a people's republic. Given that the Red Scare was underway when this episode was aired, the audience would have understood the enemy as the Soviet Union. China was still in civil war and Mao Tse-tung would not triumph until later that year.

Surprisingly the king later said Japan was behind the plot to control his country. That made no sense because World War Two was long over and Japan was occupied by the Allies until 1952. Blackstone showed a locked book to the king which he said predicted the future. Meanwhile an aide of the king poisoned some wine but was stymied when Blackstone anticipated the murder attempt.

The book was given to the king and Blackstone went on his way. The king was disappointed but when he opened the book he understood. Rhoda was equally disappointed but acquiesced when Blackstone took her along for some skulking in the throne room.

The aide was foiled when he tried to stab the king. The book's secret was that one of the pages was a mirror that allowed the king to see who was behind him, with or without a knife.



Pardon the fuzzy image. Taken on my smartphone while on a bus.

BOOKCLUBBED TO DEATH (2023) by V.M. Burns was the eighth novel in a cozy series about Samantha Washington of North Harbor, Michigan. She operated a bookstore, was an aspiring novelist, and regularly Marpled.

After a storm flooded the local library, Samantha offered the Mystery Mavens Book Club the use of her bookstore as a meeting place. In between, she was writing a novel about the Queen Mother and the murder of a London journalist. The text of that story alternated with the narrative of Samantha's life.

The book club leader was Delia Marshall, a professional book reviewer with no friends due to her bad manners. The morning after the club meeting, Samantha entered her bookshop to find Delia dead on the floor. Cause of death was a blunt instrument, to wit, the hardcover edition of the complete works of Agatha Christie.

The Deppity Dawgs suspected Samantha, so she enlisted her granny and friends from the Shady Acres Retirement Village to help. Pity the police, who had to deal with a swarm of Miss Marples.

Delia had enemies too numerous to enumerate, so motive was not much help in the investigation. No one in the Mavens mourned her and they all had motives as well. Delia had used her position to bully authors, blackmail them, or destroy their careers.

The denouement was the standard gunpoint confrontation with the murderer. He had been blackmailed by Delia for a good piece of his earnings. She forgot that blackmailers have shortened life spans.

[Extracts presented here as edited by Dale Speirs. For the full newsletter, visit www.fanac.org You can subscribe to twice-weekly email notifications about new zines added to the Fanac database. The zines are available as free pdfs.]

The FANAC Fanhistory Project is a project of The Florida Association for Nucleation and Conventions (FANAC) Inc., a nonprofit 501(c)(3) educational organization recognized by the IRS. FANAC.org is archived by the US Library of Congress for long-time preservation and future availability

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More On APAs.

by Joe Siclari

https://fanac.org/fanzines/APA_Mailings/

[An apa is an amateur press association. The first one, still in existence, was the National APA, founded in 1876. The first science fiction apa, founded in 1937, was Fantasy APA, also still in existence.]

[Apas are a method of distributing zines at lower cost. Each member of the apa sends x number of copies of his zine to a central mailer, who then collates all the zines into bundles and sends them back to members.]

Since the last newsletter, we have added quite a few publications which were distributed through FAPA, SFPA, ANZAPA, and other APAs. We now have over 900 mailings from 18 APAs represented, each with at least one zine.

Some mailings have much more than that available on the site. FAPA 100 is currently represented by 33 zines, totaling to 750 pages, with a stellar list of contributors including Ted White, Karen Anderson, Dick Eney, Dean Grennell, F.M. Busby and Lee Hoffman.

The APA Mailings list is updated at least every month, so you can watch the APAs grow online, and see what's new.

Of all the APAs, APA-F might have the highest percentage of pros writing natter. Many mailings in the 1960s had material by the New York Fanoclasts who were rapidly infiltrating the New York publishing scene. Ted White, Dave Van Arnam, Dick Lupoff, Steve Stiles, Andy Porter, and others contributed. It's often just natter but there was talent there, and the natter is often entertaining.

Apa45 required that contributors had to be born after 1945. It also required that every few issues, contributors had to submit a major zine. It rapidly became one of the more prolific apas. Luttrell's Starling, the Couchs' Quark, Montgomery's Warlock, Vardeman's Sandworm and more make it an APA worth delving into.

One of the APAs you may not be familiar with is "The Esoteric Order of Dagon". EOD was generally a sercon APA focused primarily on Lovecraft and weird fiction. We only have a few zines identified with this APA on the site, but they are worth checking out: Ben Indick's Ibid and J. Vernon Shea's Outre.

Thanks to Sasha Dumontier, we have two issues of Outre. These are massive fanzines, with poetry, reviews, reprinted newspaper articles and the odd bits of lyrics for an unproduced musical. For the most part, these are quick reads, with a couple of meaty pieces. Worth sampling.

Ibid issues are more typically amateur material, fiction, columns and such. Ben Indick liked to publish his own fiction with Lovecraft featured, and pieces by others as well. He has interesting observations in issue 15 about A. Merritt. Jerry Collins art is featured as well.

Issue 12 has a previously unpublished self-criticism piece by Lovecraft himself, written in 1929. As we get approvals to put more material on line, expect a lot of good items to show up in these and the other APAs.

FANAC By The Numbers.

https://fanac.org/fanzines/alphabetical_listing_of_fanzines.html

Fanzines

Issues	24,270
Titles	2,651
Pages	421,221

Convention publications

Pubs	5,142
Conventions	1,132
Pages	87,018

Total pages 508,239

Decade Titles Issues

undated	17	18
1930s	98	481
1940s	534	2,690
1950s	597	2,900
1960s	770	4,573
1970s	545	3,665
1980s	366	2,701
1990s	302	2,576
2000s	178	2,013
2010s	75	1,642
2020s	55	1,011

Fancylopedia

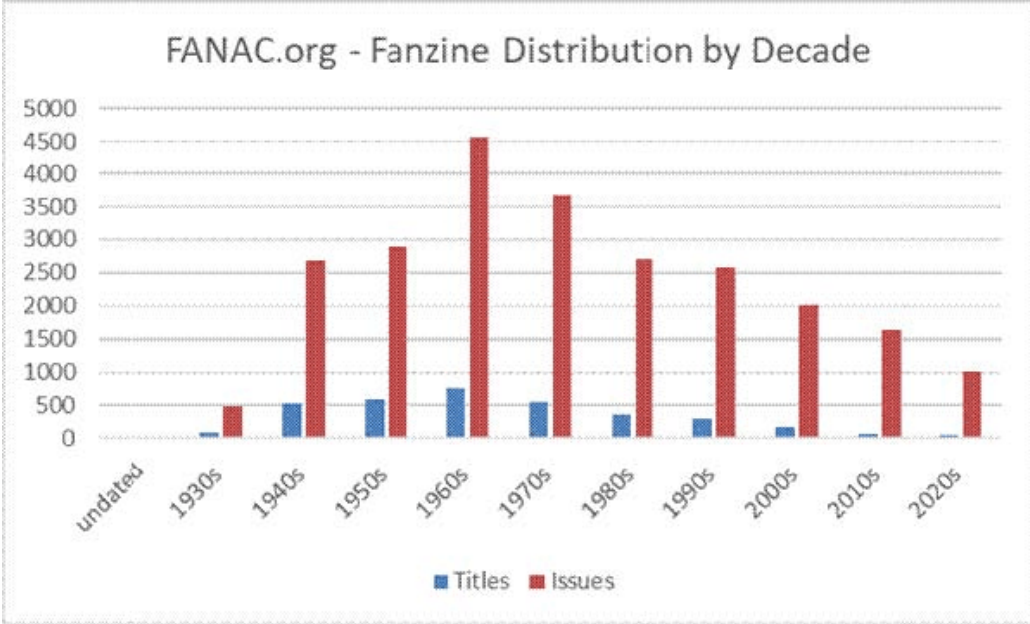
<https://fancylopedia.org>

Pages	30,079
People	6,747
Fans (a subset of people)	4,990
Fanzines	8,701
Clubs/APAS	1,574
Conventions	6,420

YouTube

<https://www.youtube.com/c/FanacFanhistory>

Views	181,900
Subscribers	1,470
Recordings	161



SEEN IN THE LITERATURE

Origin Of The Universe.

Alonso-Monsalve, E., and D.I. Kaiser (2024) **Primordial black holes with QCD color charge.** PHYSICAL REVIEW LETTERS 132:doi.org/10.1103/PhysRevLett.132.231402 (available as a free pdf)

[The gravitational movements of galaxies do not match the visible matter, so the concept of dark matter is used to make the math work properly. Trouble is, no one can observe dark matter. Unseen black holes are a popular suggestion.]

Authors' abstract: *We describe a realistic mechanism whereby black holes with significant QCD color charge could have formed during the early Universe. Primordial black holes (PBHs) could make up a significant fraction of the dark matter if they formed well before the QCD confinement transition.*

Such PBHs would form by absorbing unconfined quarks and gluons and hence could acquire a net color charge. We estimate the number of PBHs per Hubble volume with near-extremal color charge for various scenarios and discuss possible phenomenological implications.

Matsuoka, Y., et al (2024) **Discovery of merging twin quasars at z = 6.05.** ASTRONOMICAL JOURNAL LETTERS 965:doi.org/10.3847/2041-8213/ad35c7 (available as a free pdf)

[Redshift is expressed as z, a non-linear measurement in light years. 6.06 is approximately 24 billion light years away, very near the origin of the universe at 26 billion light years.]

Authors' abstract: *We report the discovery of two quasars at a redshift of z = 6.05 in the process of merging. They were serendipitously discovered from the deep multiband imaging data collected by the Hyper Suprime-Cam (HSC) Subaru Strategic Program survey.*

The quasars, HSC J121503.42-014858.7 (C1) and HSC J121503.55-014859.3 (C2), both have luminous emission with a clear broad component (full width at half maximum >1000 km s-1).

The two quasars are separated by 12 kiloparsecs in projected proper distance, bridged by a structure in the rest-UV light suggesting that they are undergoing a merger. This pair is one of the most distant merging quasars reported to date, providing crucial insight into galaxy and black hole build-up in the hierarchical structure formation scenario.

A companion paper will present the gas and dust properties captured by Atacama Large Millimeter/submillimeter Array observations, which provide additional evidence for and detailed measurements of the merger, and also demonstrate that the two sources are not gravitationally lensed images of a single quasar.

Planets.

Yuan, Q., et al (2024) **A giant impact origin for the first subduction on Earth.** *GEOPHYSICAL RESEARCH LETTERS* 51:doi.org/10.1029/2023GL106723 (available as a free pdf)

Authors' abstract: *Plate tectonics remains unique to Earth, but when and how it started is debated. Earth's oldest minerals indicate a clement surface by 4.3 gigayears ago, resembling the modern Earth with its granitic crust and oceans.*

Granite is most easily explained as originating from subduction. However, the mechanisms for subduction initiation, especially so soon after the Moon-forming giant impact, remain elusive. Earlier studies indicate that the core-mantle boundary (CMB) temperature is increased due to accumulation of the impactor's core during the impact.

Our recent work further shows that the lower half of Earth's mantle remains mostly solid after this impact and that parts of the impactor's mantle might have survived as the two seismically-observed large low-shear velocity provinces (LLSVPs).

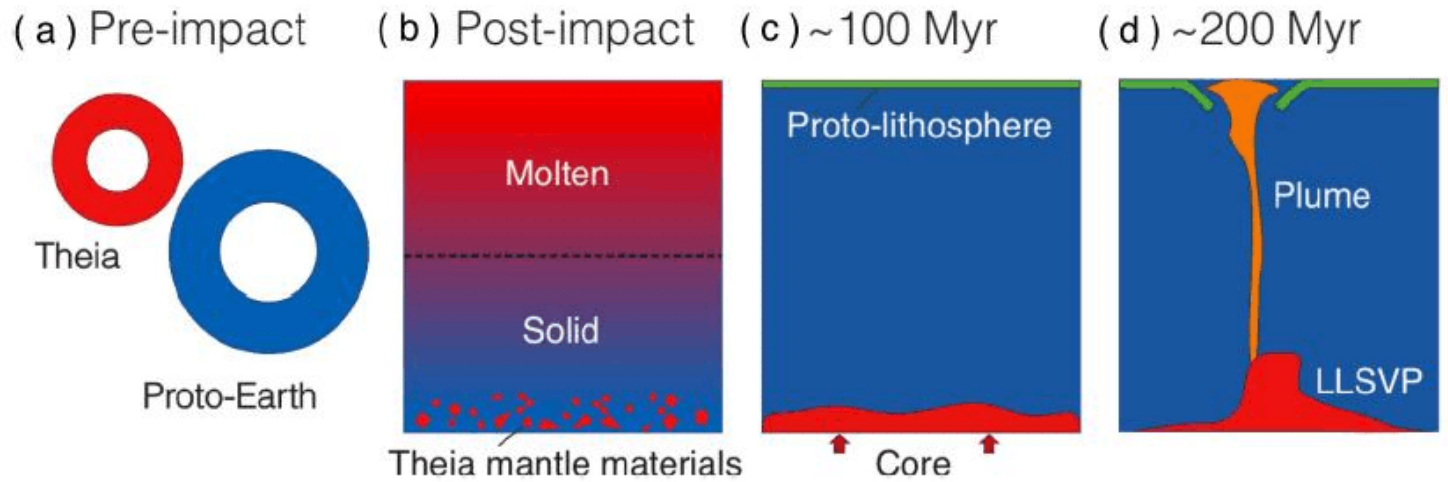
In this study, we perform whole-mantle convection models to illustrate that strong mantle plumes can arise, weaken the lithosphere, and eventually initiate subduction ~200 megayears after the giant impact.

Our systematic computations reveal that the hot CMB temperature after the impact is the primary factor determining whether there is early subduction initiation, with enrichment of heat-producing elements in LLSVPs as another potential contributor. Our model ties the Moon's formation to incipient subduction, providing insights for understanding the diverse tectonic regimes of rocky planets.

Hadean zircons provide a potential record of Earth's earliest subduction 4.3 billion years ago. It remains enigmatic how subduction could be initiated so soon after the presumably Moon-forming giant impact.

Earlier studies found an increase in Earth's core-mantle boundary temperature due to the accumulation of the impactor's core, and our recent work shows Earth's lower mantle remains largely solid, with some of the impactor's mantle potentially surviving as the large low-shear velocity provinces.

[Schematic is from this paper.]



Opher, M., et al (2024) **A possible direct exposure of the Earth to the cold dense interstellar medium 2 to 3 Myr ago.** NATURE ASTRONOMY 8:doi.org/10.1038/s41550-024-02279-9-8 (available as a free pdf)

Authors' abstract: *Cold, dense clouds in the interstellar medium of our Galaxy are 4 to 5 orders of magnitude denser than their diffuse counterparts. Our Solar System has most likely encountered at least one of these dense clouds during its lifetime. However, evidence for such an encounter has not been studied in detail yet.*

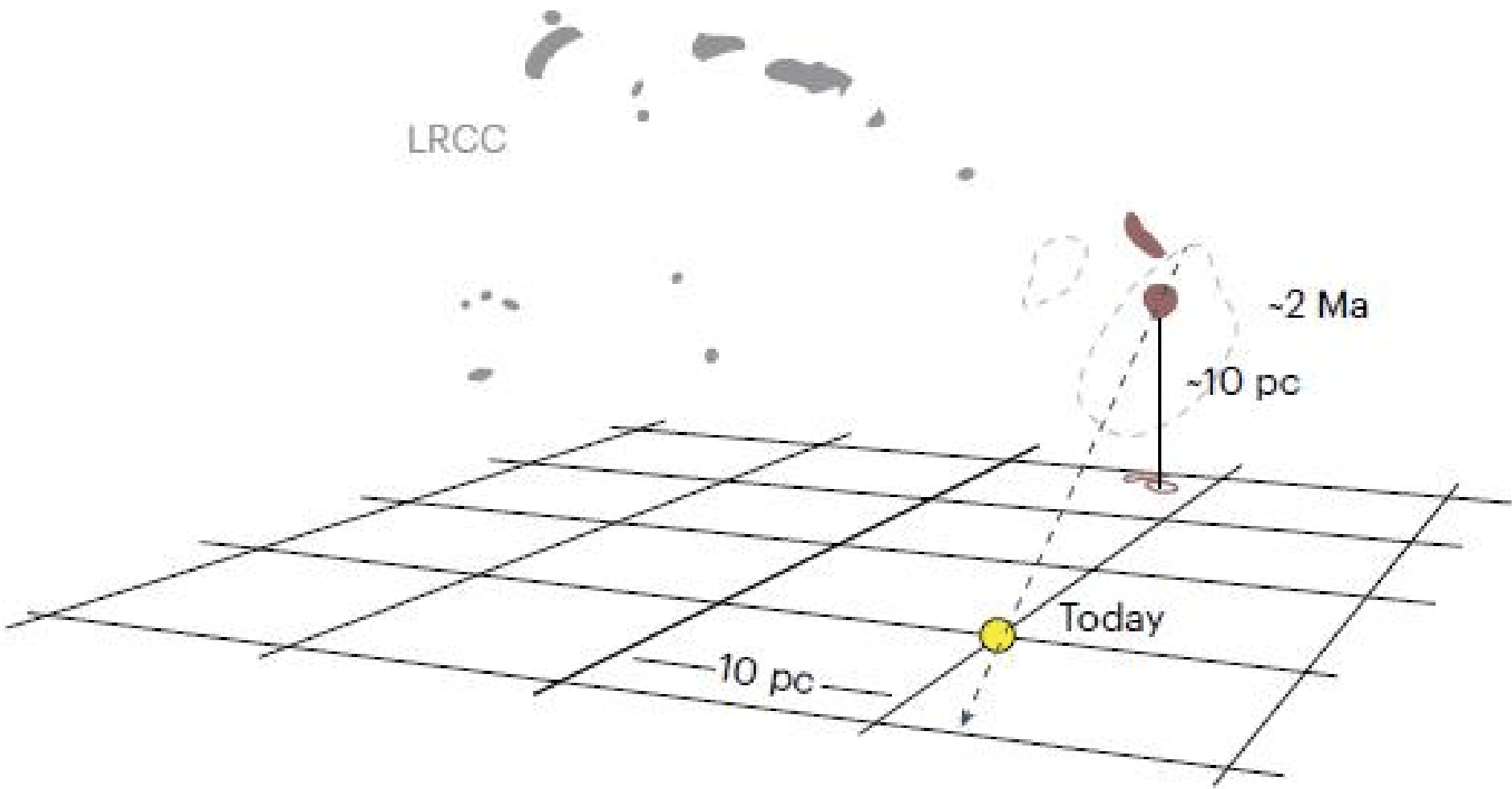
Here we derive the velocity field of the Local Ribbon of Cold Clouds (LRCC) by modelling the 21 cm data from the HI4PI survey, finding that the Solar System may have passed through the LRCC in the constellation Lynx 2 to 3 million years ago.

Using a state-of-the-art simulation of the heliosphere, we show that during the passage, the heliosphere shrinks to a scale of 0.22 AU, smaller than the Earth's orbit around the Sun.

This would have put the Earth in direct contact with the dense interstellar medium for a period of time and exposed it to a neutral hydrogen density above $3,000 \text{ cm}^{-3}$.

Such a scenario agrees with geological evidence from ^{60}Fe and ^{244}Pu isotopes. The encounter and related increased radiation from Galactic cosmic rays might have had a substantial impact on the Earth's system and climate.

[Chart is from this paper and shows the course of the Sun (yellow dot) from the cloud. pc = parsecs, Ma = megayears ago]



Valantinas, A., et al (2024) **Evidence for transient morning water frost deposits on the Tharsis volcanoes of Mars.** NATURE GEOSCIENCE 17:doi.org/10.1038/s41561-024-01457-7 (available as a free pdf)

Authors' abstract: *The present-day water cycle on Mars has implications for habitability and future human exploration. Water ice clouds and water vapour have been detected above the Tharsis volcanic province, suggesting the active exchange of water between regolith and atmosphere.*

Here we report observational evidence for extensive transient morning frost deposits on the calderas of the Tharsis volcanoes (Olympus, Arsia and Ascraeus Montes, and Ceraunius Tholus) using high-resolution colour images from the Colour and Stereo Surface Imaging System on board the European Space Agency's Trace Gas Orbiter.

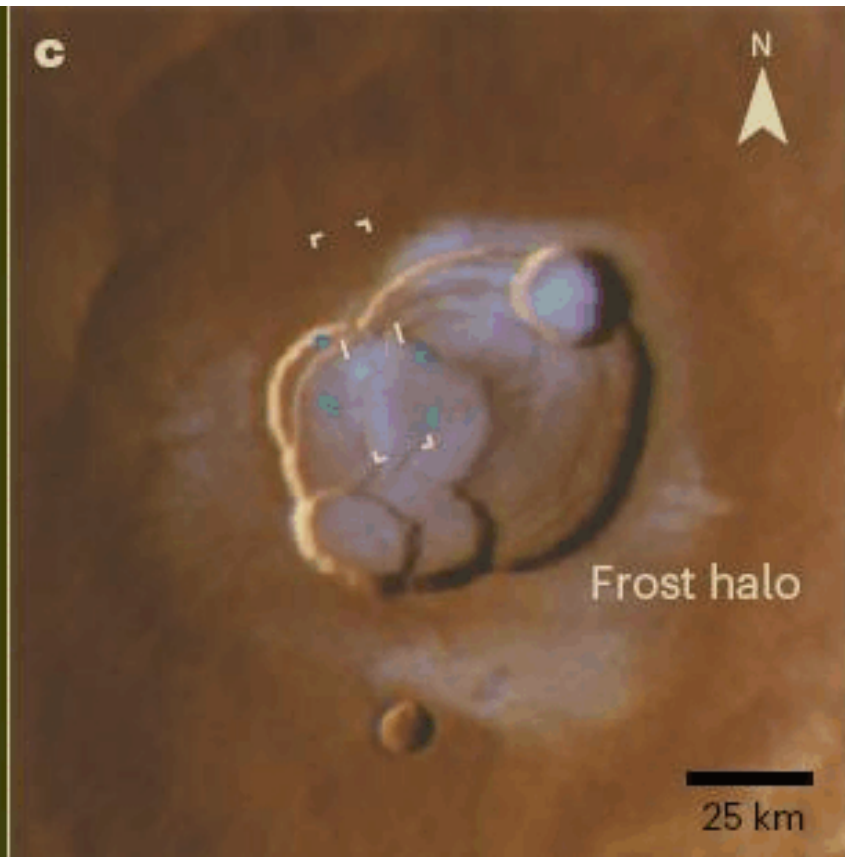
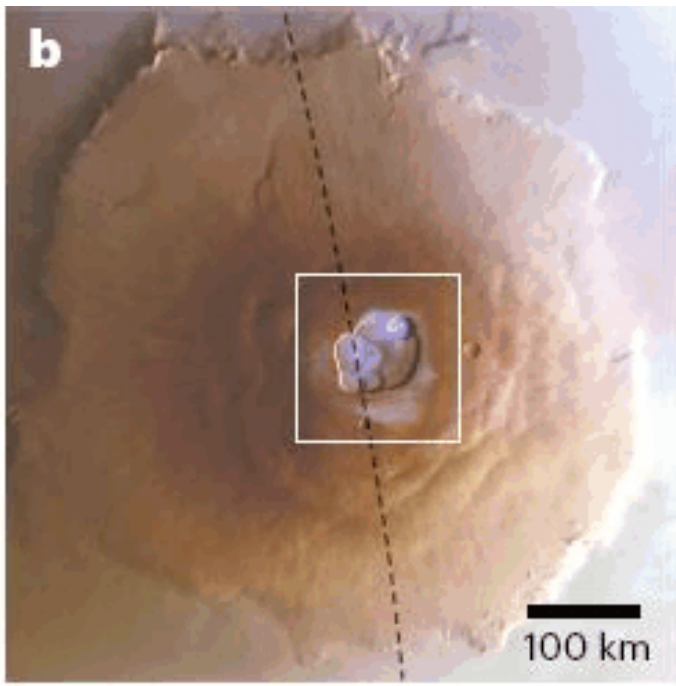
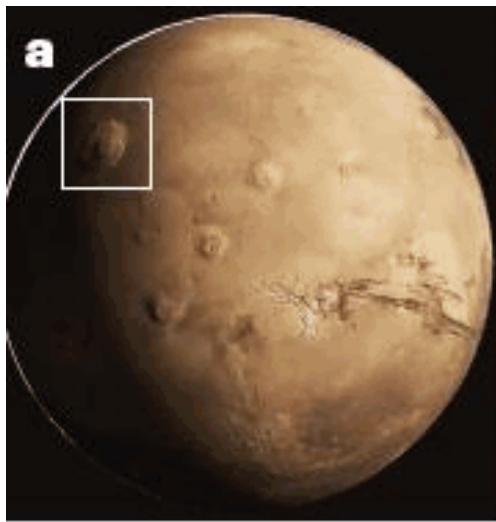
The transient bluish deposits appear on the caldera floor and rim in the morning during the colder Martian seasons but are not present by afternoon.

The presence of water frost is supported by spectral observations, as well as independent imagery from the European Space Agency's Mars Express orbiter.

Climate model simulations further suggest that early-morning surface temperatures at the high altitudes of the volcano calderas are sufficiently low to support the daily condensation of water, but not CO₂ frost.

Given the unlikely seasonal nature of volcanic outgassing, we suggest the observed frost is atmospheric in origin, implying the role of microclimate in local frost formation and a contribution to the broader Mars water cycle.

The Tharsis Rise is a large volcanic province in the tropics of Mars (latitude range: ±40° N, longitude range: 220 to 300° E). It is a broad topographic dome that rises about 5 km above the surrounding terrain and covers a region 5,000 km wide.



It contains some of the Solar System's largest and tallest volcanoes, such as Olympus Mons (21 km altitude), Arsia Mons (18 km), Ascraeus Mons (18 km) and Pavonis Mons (14 km), but also smaller shield volcanoes such as Ceraunius Tholus (9 km).

Volcanic activity on Mars has been concentrated predominantly in this region throughout the planet's geological history, persisting into current times, as evidenced by lava flows that are as recent as 2.4 million years old.

No current volcanic activity has been detected in Tharsis, although recent geophysical data show that Mars is still geodynamically active.

Notable orographic water ice clouds and other atmospheric phenomena have been observed in Tharsis. Water ice clouds play a fundamental role in cycling water on Mars, moving moisture for thousands of kilometres from polar regions to relatively dry equatorial areas.

[Images on the previous page are from this paper.]

Sánchez-Lavega, A., et al (2024) **The origin of Jupiter's Great Red Spot.** GEOPHYSICAL RESEARCH LETTERS 51:doi.org/10.1029/2024GL108993 (available as a free pdf)

Authors' abstract: Jupiter's Great Red Spot (GRS) is the largest and longest-lived known vortex of all solar system planets but its lifetime is debated and its formation mechanism remains hidden.

G.D. Cassini discovered in 1665 the presence of a dark oval at the GRS latitude, known as the "Permanent Spot" (PS) that was observed until 1713. We show from historical observations of its size evolution and motions that PS is unlikely to correspond to the current GRS, that was first observed in 1831.

Numerical simulations rule out that the GRS formed by the merging of vortices or by a superstorm, but most likely formed from a flow disturbance between the two opposed Jovian zonal jets north and south of it. If so, the early GRS should have had a low tangential velocity so that its rotation velocity has increased over time as it has shrunk.

[Images on the next page are from this paper.]

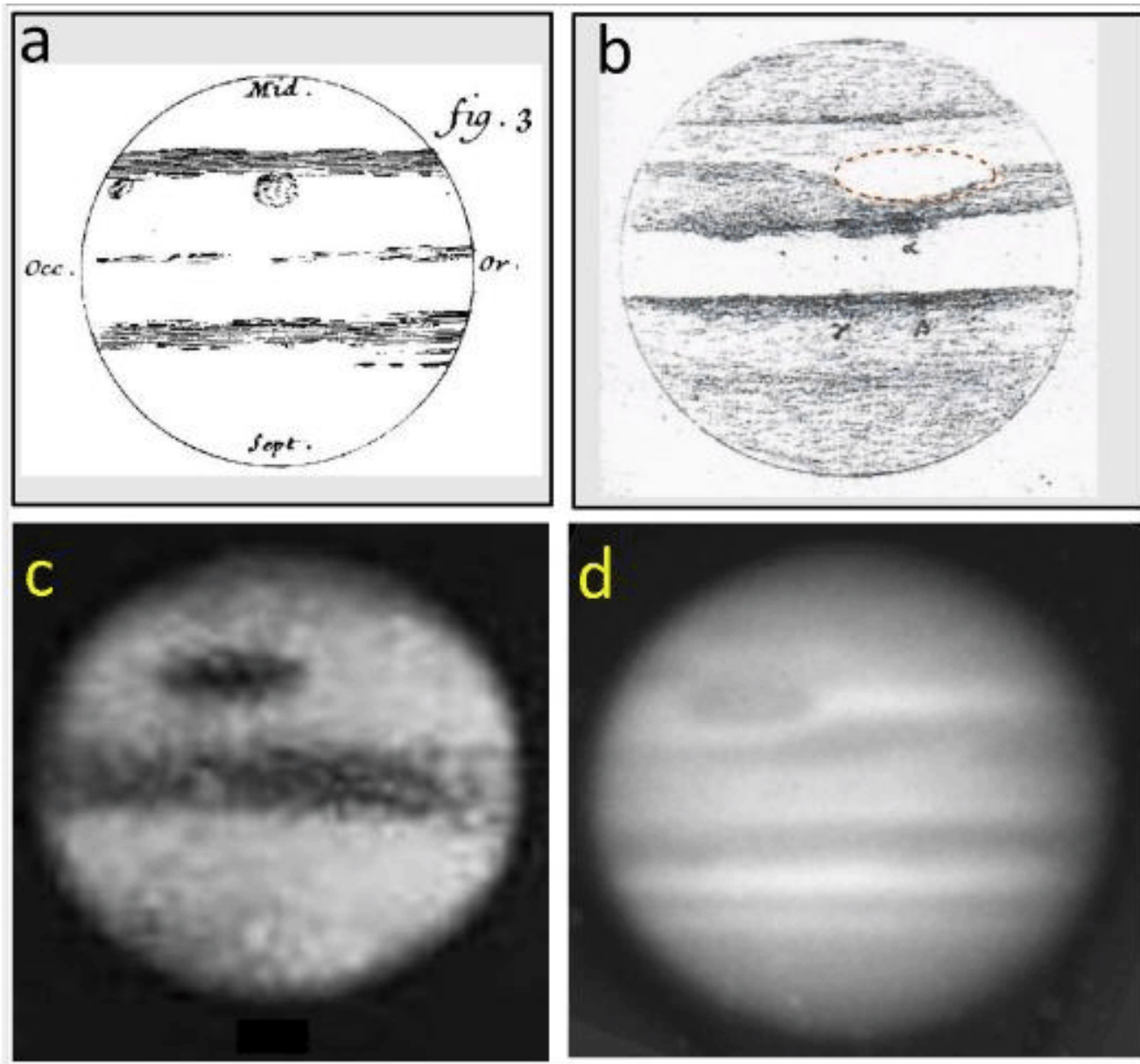


Figure 1. The Permanent Spot (PS) and the early Great Red Spot (GRS). (a) Drawing of the PS by G. D. Cassini, 19 January 1672. (b) Drawing by S. Swabe in 10 May 1851, showing the GRS area as a clear oval with limits marked by its Hollow (draw by a red dashed line). (c) Photograph by A. A. Common obtained in Ealing (London) on 3 September 1879 using a 91 cm reflector (5.30 m focal length, 1 s exposures) (Clerke, 1887). The GRS shows prominently as a “dark” oval due to its red color and photographic plate sensibility to violet-blue wavelengths. (d) Photograph from Observatory Lick with a yellow filter on 14 October 1890. All figures show the astronomical view of Jupiter (South up, East left) to preserve notes on the drawings.

Asteroids.

Zhang, C., et al (2024) **Ionizing radiation exposure on Arrokoth shapes a sugar world.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 121:doi.org/10.1073/pnas.2320215121

Authors' abstract: *The Kuiper Belt object (KBO) Arrokoth, the farthest object in the Solar System ever visited by a spacecraft, possesses a distinctive reddish surface and is characterized by pronounced spectroscopic features associated with methanol.*

However, the fundamental processes by which methanol ices are converted into reddish, complex organic molecules on Arrokoth's surface have remained elusive.

Here, we combine laboratory simulation experiments with a spectroscopic characterization of methanol ices exposed to proxies of galactic cosmic rays. Our findings reveal that the surface exposure of methanol ices at 40 K can replicate the color slopes of Arrokoth.

Sugars and their derivatives (acids, alcohols) with up to six carbon atoms, including glucose and ribose, fundamental building block of RNA, were ubiquitously identified.

In addition, polycyclic aromatic hydrocarbons (PAHs) with up to six ring units ($^{13}\text{C}_{22}\text{H}_{12}$) were also observed. These sugars and their derivatives along with PAHs connected by unsaturated linkers represent key molecules rationalizing the reddish appearance of Arrokoth.

The formation of abundant sugar-related molecules dubs Arrokoth as a sugar world and provides a plausible abiotic preparation route for a key class of biorelevant molecules on the surface of KBOs prior to their delivery to prebiotic Earth.

Botany.

Nardini, A., et al (2024) **Talk is cheap: rediscovering sounds made by plants.** TRENDS IN PLANT SCIENCE 29:doi.org/10.1016/j.tplants.2023.11.023 (available as a free pdf)

Authors' abstract: *A recent study and related commentaries have raised new interest in the phenomenon of ultrasonic sound production by plants exposed to stress, especially drought.*

While recent technological advancements have allowed the demonstration that these sounds can propagate in the air surrounding plants, we remind readers here that research on sound production by plants is more than 100 years old.

The mechanisms and patterns of sound emission from plants subjected to different stress factors are also reasonably understood, thanks to the pioneering work of John Milburn and others.

By contrast, experimental evidence for a role of these sounds in plant-animal or plant-plant communication remains lacking and, at present, these ideas remain highly speculative.

Research from 1970 onward has shown that sounds can also be produced by other passive physical processes in plants, and also demonstrated that acoustic emissions can be used to monitor the water status of plants in the field.

The hypothesis that sounds produced by plants are informative for insects feeding on stressed plants, or even for neighboring plants, is attractive but still purely speculative to date.

Geology.

Zundel, M., et al (2024) **A large-scale transcontinental river system crossed West Antarctica during the Eocene.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adn6056 (available as a free pdf)

Authors' abstract: *We report geochronological and sedimentological data from a drill core from the Amundsen Sea shelf, providing insights into tectonic and topographic conditions during the Eocene (~44 to 34 million years ago), shortly before major ice sheet buildup.*

Our findings reveal the Eocene as a transition period from >40 million years of relative tectonic quiescence toward reactivation of the West Antarctic Rift System, coinciding with incipient volcanism, rise of the Transantarctic Mountains, and renewed sedimentation under temperate climate conditions.

The recovered sediments were deposited in a coastal-estuarine swamp environment at the outlet of a >1500-km-long transcontinental river system, draining from the rising Transantarctic Mountains into the Amundsen Sea.

Much of West Antarctica hence lied above sea level, but low topographic relief combined with low elevation inhibited widespread ice sheet formation.

Paleobiology.

Bicknell, R.D.C., et al (2024) **Evidence for cryptic molting behavior in the trilobite *Toxochasmops vormsiensis* from the Upper Ordovician Katian Kõrgessaare Formation, Estonia.** THE SCIENCE OF NATURE 111:doi.org/10.1007/s00114-024-01906-8 (available as a free pdf)

Authors' abstract: *Documentation of cryptic trilobite behavior has presented important insights into the paleoecology of this fully extinct arthropod group. One such example is the preservation of trilobites inside the remains of larger animals.*

To date, evidence for trilobites within cephalopods, gastropods, hyoliths, and other trilobites has been presented. Importantly, most of these interactions show trilobite molts, suggesting that trilobites used larger animals for protection during molting.

*To expand the record of molted trilobites within cephalopods, we present a unique case of a *Toxochasmops vormsiensis* trilobite within the body chamber of a *Gorbyoceras textumaraneum* nautiloid from the Upper Ordovician Kõrgessaare Formation of Estonia.*

By examining this material, we present new insights into the ecology of pterygometopid trilobites, highlighting how these forms used large cephalopods as areas to successfully molt.

Henderson, Donald M. (2024) **Using your head: Cranial steering in pterosaurs.** THE SCIENCE OF NATURE 111:doi.org/10.1007/s00114-024-01915-7

Author's abstract: *The vast majority of pterosaurs are characterized by relatively large, elongate heads that are often adorned with large, elaborate crests.*

Projecting out in front of the body, these large heads and any crests must have had an aerodynamic effect. The working hypothesis of the present study is that these oversized heads were used to control the left-right motions of the body during flight.

Using digital models of eight non-pterodactyls (rhamphorhynchoids) and ten pterodactyls, the turning moments associated with the head and neck show a close and consistent correspondence with the rotational inertia of the whole body about a vertical axis in both groups, supporting the idea of a functional relationship.

Turning moments come from calculating the lateral area of the head (plus any crests) and determining the associated lift (aerodynamic force) as a function of flight speed, with flight speeds being based on body mass.

Rotational inertias were calculated from the three-dimensional mass distribution of the axial body, the limbs, and the flight membranes. The close correlation between turning moment and rotational inertia was used to revise the life restorations of two pterosaurs and to infer relatively lower flight speeds in another two.

Kear, B.P., et al (2024) **Oldest southern sauropterygian reveals early marine reptile globalization.** CURRENT BIOLOGY 34:R553-R563 (available as a free pdf)

Authors' extracts: *Sauropterygians were the stratigraphically longest-ranging clade of Mesozoic marine reptiles with a global fossil record spanning ~180 million years.*

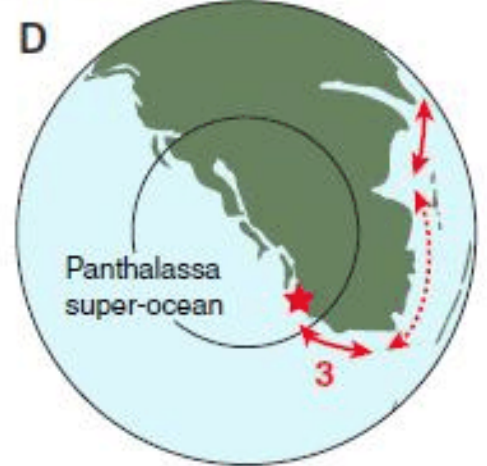
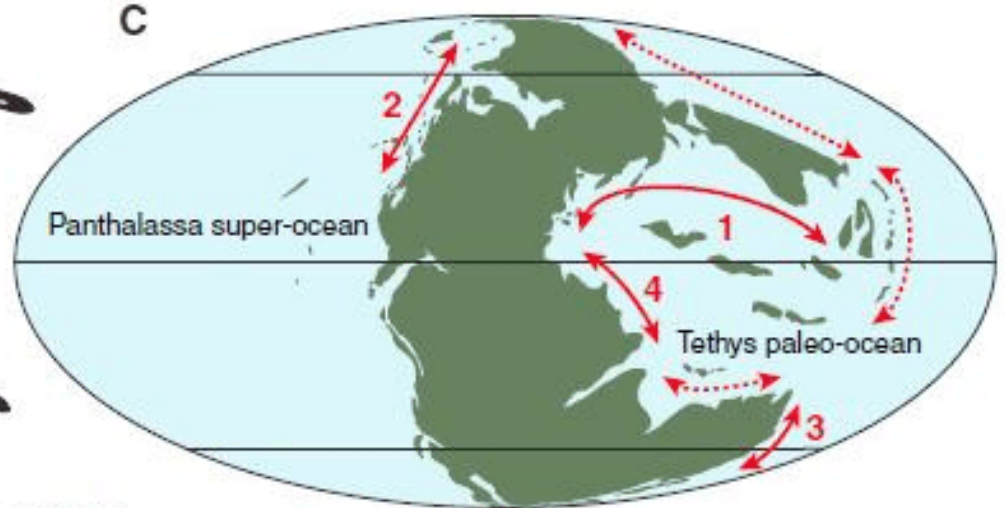
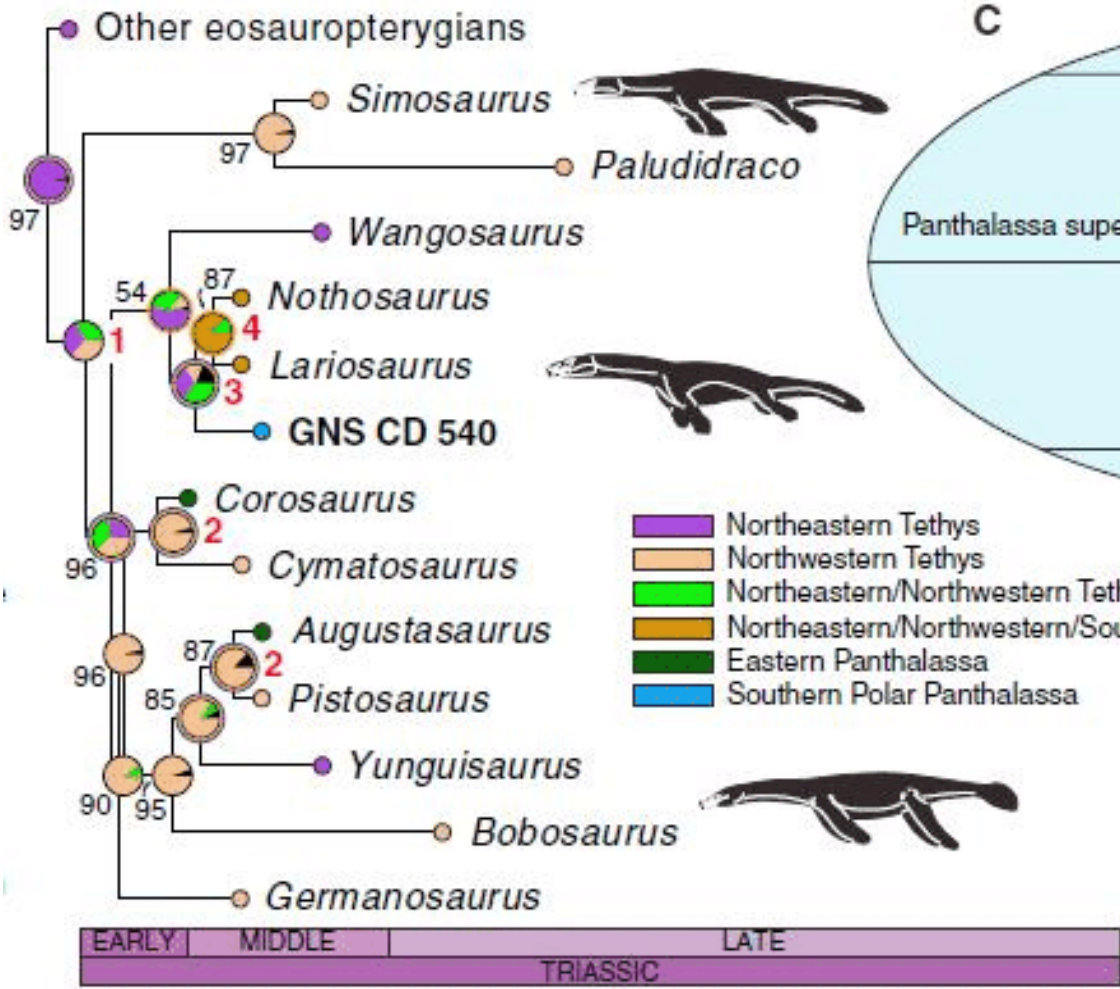
However, their early evolution has only been known from what is now the Northern Hemisphere, extending across the northern and trans-equatorial western margins of the Tethys paleo-ocean after the late-Early Triassic (late Olenekian, ~248.8 million years (Ma) ago), and via possible trans-Arctic migration to the Eastern Panthalassa superocean prior to the earliest Middle Triassic (Olenekian-earliest Anisian, ~247 Ma).

Here, we describe the geologically oldest sea-going reptile from the Southern Hemisphere, a nothosaur (basal sauropterygian) from the Middle Triassic (Anisian, after ~246 Ma) of New Zealand.

Time-scaled ancestral range estimations thus reveal an unexpected circum-Gondwanan high-paleolatitude (>60° South) dispersal from a northern Tethyan origination center.

This coincides with the adaptive diversification of sauropterygians after the end-Permian mass extinction and suggests that rapid globalization accompanied their initial radiation in the earliest Mesozoic.

[Maps are from this paper.]



Loewen, M.A., et al (2024) *Lokiceratops rangiformis* gen. et sp. nov. (Ceratopsidae: Centrosaurinae) from the Campanian Judith River Formation of Montana reveals rapid regional radiations and extreme endemism within centrosaurine dinosaurs. PEERJ 12:doi.org/10.7717/peerj.17224

Authors' abstract: *The Late Cretaceous of western North America supported diverse dinosaur assemblages, though understanding patterns of dinosaur diversity, evolution, and extinction has been historically limited by unequal geographic and temporal sampling.*

In particular, the existence and extent of faunal endemism along the eastern coastal plain of Laramidia continues to generate debate, and finer scale regional patterns remain elusive.

Here, we report a new centrosaurine ceratopsid, Lokiceratops rangiformis, from the lower portion of the McClelland Ferry Member of the Judith River Formation in the Kennedy Coulee region along the Canada-USA border.

Dinosaurs from the same small geographic region, and from nearby, stratigraphically equivalent horizons of the lower Oldman Formation in Canada, reveal unprecedented ceratopsid richness, with four sympatric centrosaurine taxa and one chasmosaurine taxon.

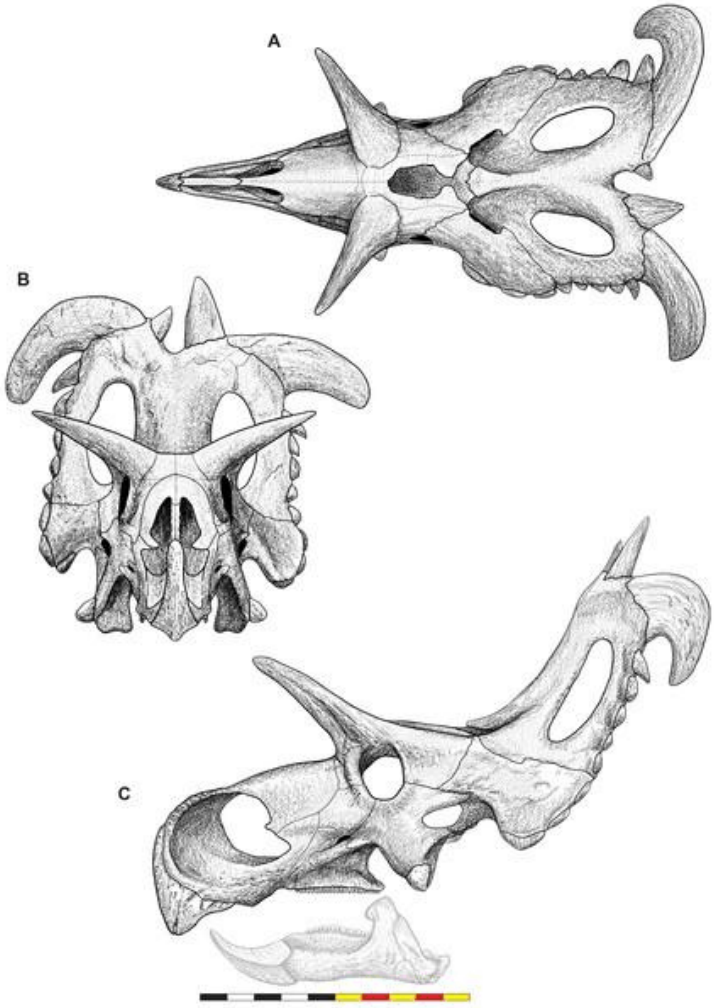
Phylogenetic results show that Lokiceratops, together with Albertaceratops and Medusaceratops, was part of a clade restricted to a small portion of northern Laramidia approximately 78 million years ago.

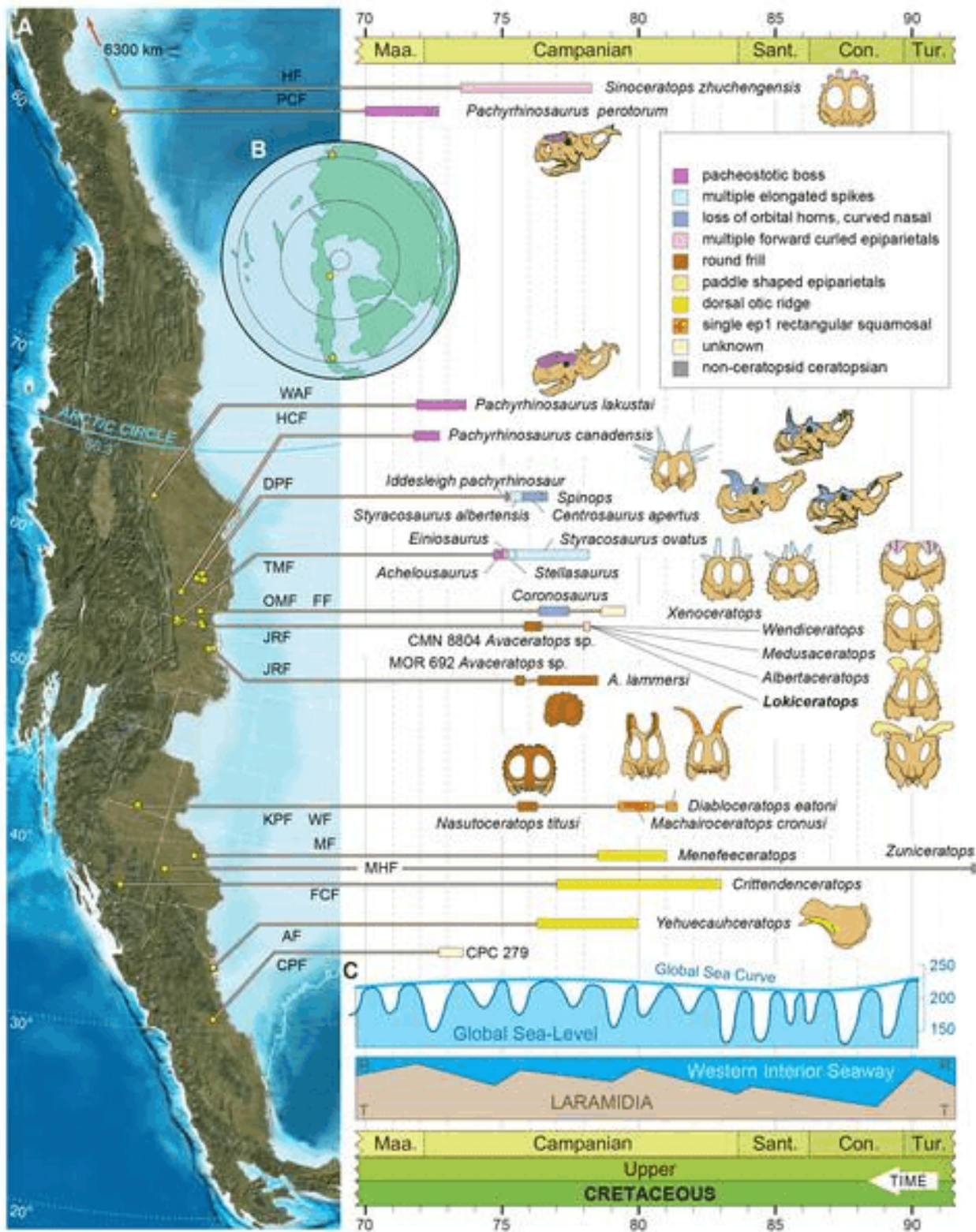
This group, Albertaceratopsini, was one of multiple centrosaurine clades to undergo geographically restricted radiations, with Nasutoceratopsini restricted to the south and Centrosaurini and Pachyrostra restricted to the north.

High regional endemism in centrosaurs is associated with, and may have been driven by, high speciation rates and diversity, with competition between dinosaurs limiting their geographic range.

High speciation rates may in turn have been driven in part by sexual selection or latitudinally uneven climatic and floral gradients. The high endemism seen in centrosaurines and other dinosaurs implies that dinosaur diversity is underestimated and contrasts with the large geographic ranges seen in most extant mammalian megafauna.

[Images are from this paper. This page shows views of the skull with weird horns above the eyes. On the next page is a map showing ceratopsian distribution. During the era of the dinosaurs, North America was split into two sub-continent by the Western Interior Seaway, which went along the eastern slopes of the Rockies from the Gulf of Mexico to the Arctic Ocean.]





[Laramidia was a mountainous peninsula that ran from China to the Caribbean Sea. Central America did not yet exist. The Rockies were originally much taller like the Himalayas but as they eroded, their sediments filled in the Seaway.]

Taniguchi, R., et al (2024) **Sensory evidence for complex communication and advanced sociality in early ants.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adp3623 (available as a free pdf)

[Ants are surprisingly young on the evolutionary scale. They only began evolving about 100 megayears ago during the Cretaceous. The asteroid impact gave them a boost.]

Authors' abstract: *Advanced social behavior, or eusociality, has been evolutionarily profound, allowing colonies of ants, termites, social wasps, and bees to dominate competitively over solitary species throughout the Cenozoic.*

Advanced sociality requires not just nestmate cooperation and specialization but refined coordination and communication. Here, we provide independent evidence that 100-million-year-old Cretaceous ants in amber were social, based on chemosensory adaptations.

Previous studies inferred fossil ant sociality from individual ants preserved adjacent to others. We analyzed several fossil ants for their antennal sensilla, using original rotation imaging of amber microinclusions, and found an array of antennal sensilla, specifically for alarm pheromone detection and nestmate recognition, sharing distinctive features with extant ants.

Although Cretaceous ants were stem groups, the fossilized sensilla confirm hypotheses of their complex sociality.

Environmental Science.

McLeman, R., et al (2024) **Future prospects for backyard skating rinks look bleak in a warming climate.** CANADIAN GEOGRAPHIES 68:doi.org/10.1111/cag.12878 (available as a free pdf)

[Every winter, like millions of children across Canada, my brother and I would build a backyard skating rink. After the first heavy snow of the winter in November, we would shovel the yard clear and use the snow to build banks around the rink.]

[We then gently sprayed water from a garden hose nozzle to form a crust on the banks and the ground. The rink was built up layer by layer with spraying. Soon

enough, we and the neighbourhood kids would have tournaments for the world championship. The Stanley Cup? What of it?]

Authors' abstract: *Each winter, purpose-built outdoor skating rinks are constructed in backyards and community parks across much of Canada and the northern United States. Past research projects that warmer winters will make it increasingly difficult to build outdoor rinks without artificial refrigeration.*

Here we build upon previous studies by mapping areas of North America where present average January temperatures are generally suitable each year for building outdoor rinks, and how this area will change by the 2050s and 2080s.

Using projections from downscaled general circulation models, we show how under current emissions pathways, average January temperatures will become too mild by the 2050s to build outdoor rinks across much of eastern North America in most winters, and this area will expand by the 2080s to include most of the western United States.

Under high emissions scenarios, unsuitably mild January temperatures expand to include densely populated areas of Canada's Prairie provinces by the 2080s.

In short, many North Americans who build outdoor rinks every winter will, by mid-century, be living in areas where temperatures are only cold enough to do so occasionally, creating a range of social, cultural, and health implications for people living in those regions.

Ferreira, Oscar (2024) **Unforeseen cascading effects of an inlet opening.** SCIENTIFIC REPORTS 14:doi.org/10.1038/s41598-024-63467-0 (available as a free pdf)

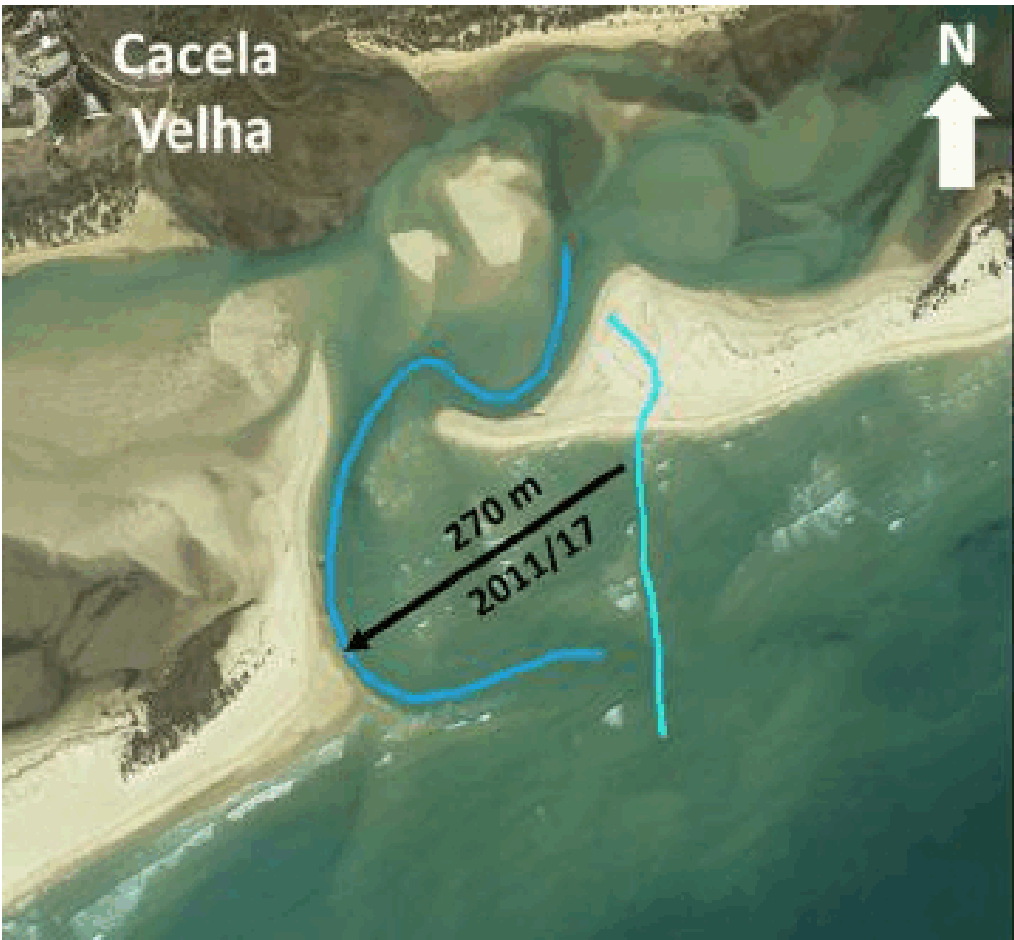
Author's abstract: *The opening of the Cacela Inlet (southern Portugal) in 2010 led to unforeseen effects observed after 2017, including an extreme acceleration of the retreat of the inland lagoon margin from about 0.2 to 2 metres/year.*

This was a consequence of the development of a large flood delta in an area of limited accommodation space, forcing the main tidal channel to move inland. The coastal retreat currently affects a flat sandy area that separates the old and inactive Cacela cliff from the lagoon.

Between 2025 and 2030, the currently inactive Cacela cliff is likely to become active again, posing a potential risk of damage to a medieval fortress and the existing settlement of Cacela Velha, an unforeseen cascading effect of the opening of the inlet.

In order to prevent instability and damage to this legally protected area of national and public interest, several coastal management measures will be required.

[Images are from this paper. Black arrows indicate direction of channel movement. Light blue line was course of water at start of period and dark blue at end of period.]



Hill, E.M., et al (2024) **Human amplification of secondary earthquake hazards through environmental modifications.** NATURE REVIEWS EARTH AND ENVIRONMENT 5:doi.org/10.1038/s43017-024-00551-z

Authors' abstract: *Anthropogenic climate change and modification of landscapes, such as deforestation, sediment movement, irrigation and sea-level rise, can destabilize natural systems and amplify hazards from earthquake-triggered landslides, liquefaction, tsunami and coastal flooding.*

In this Perspective, we examine the connections and feedbacks between human environmental modifications and secondary earthquake hazards to identify steps for hazard mitigation.

Destabilization of slopes by vegetation removal, agricultural activities, steepening, loading and drainage disruption can amplify landslide hazards. For example, landslides were mainly triggered on deforested slopes after the 2010 and 2021 Haiti earthquakes.

Liquefaction hazards are intensified by extensive irrigation and land reclamation, as exemplified by liquefaction causing >15 metres of ground displacement in irrigated areas after the 2018 Palu earthquake.

Degradation or removal of primary coastal vegetation and coral reefs, destruction of sand dunes, subsidence from groundwater withdrawal, and sea-level rise can increase tsunami inland reach.

Restoration of natural coastal habitats could help decrease the maximum inland reach of tsunami, but their effectiveness depends on tsunami size.

Sustainable farming practices, such as mixed crop cultivation and drip irrigation, can successfully reduce the saturation of soils and the liquefaction hazard in some situations.

Frazier, C.F., et al (2024) **Bison act as habitat engineers for large branchiopod crustaceans in the Great Plains.** TRANSACTIONS OF THE KANSAS ACADEMY OF SCIENCE 127:doi.org/10.1660/062.127.0105

Authors' abstract: *Large branchiopods are a group of aquatic crustaceans known for possessing hardy resting eggs capable of dispersal between temporary wetland habitats by wind and animal vectors.*

In this study, we rehydrated dry sediments from bison wallows to assess large branchiopod use of these habitats and potentially the capacity of bison to act as dispersal vectors of cysts.

We observed one clam shrimp genus and one tadpole shrimp species in our rehydrated samples, providing strong evidence of large branchiopod establishment in bison-created habitats.

We failed to see a relationship between spatial arrangement, bison utilization, and large branchiopod abundance, so future studies are encouraged to assess dispersal capability by bison.

Ferreira, J.P., et al (2024) **Potential ozone depletion from satellite demise during atmospheric reentry in the era of mega-constellations.** GEOPHYSICAL RESEARCH LETTERS 51:doi.org/10.1029/2024GL109280 (available as a free pdf)

Authors' abstract: *With ongoing plans for many constellations of small satellites, the number of objects orbiting the Earth is expected to continue increasing in the foreseeable future.*

At the end of service life, satellites are disposed into the atmosphere, burning up during the process and generating aluminum oxides, which are known to accelerate ozone depletion.

This paper investigates the oxidation process of the satellite's aluminum content during atmospheric reentry utilizing atomic-scale molecular dynamics simulations. We find that the population of reentering satellites in 2022 caused a 29.5% increase of aluminum in the atmosphere above the natural level, resulting in around 17 metric tons of aluminum oxides injected into the mesosphere.

The byproducts generated by the reentry of satellites in a future scenario where mega-constellations come to fruition can reach over 360 metric tons per year. As aluminum oxide nanoparticles may remain in the atmosphere for decades, they can cause significant ozone depletion.

Large constellations of small satellites will significantly increase the number of objects orbiting the Earth. Satellites burn up at the end of service life during reentry, generating aluminum oxides as the main byproduct.

These are known catalysts for chlorine activation that depletes ozone in the stratosphere. We present the first atomic-scale molecular dynamics simulation study to resolve the oxidation process of the satellite's aluminum structure during mesospheric reentry, and investigate the ozone depletion potential from aluminum oxides.

We find that the demise of a typical 250-kg satellite can generate around 30 kg of aluminum oxide nanoparticles, which may endure for decades in the atmosphere. Aluminum oxide compounds generated by the entire population of satellites reentering the atmosphere in 2022 are estimated at around 17 metric tons.

Reentry scenarios involving mega-constellations point to over 360 metric tons of aluminum oxide compounds per year, which can lead to significant ozone depletion.

Modern Humans.

Shi, H., et al (2024) **Sedentary behaviors, light-intensity physical activity, and healthy aging.** JAMA NETWORK OPEN 7:doi.org/10.1001/jamanetworkopen.2024.16300 (available as a free pdf)

Authors' abstract: Sleep duration and moderate-to-vigorous physical activity (MVPA) are associated with healthy aging, but the associations of sedentary behaviors and light-intensity physical activity (LPA) with healthy aging are still unclear.

Healthy aging was defined as survival to at least age 70 years with maintenance of 4 health domains (ie, no major chronic diseases and no impairment in subjective memory, physical function, or mental health).

Among 45,176 participants (mean age, 59.2 years), 3,873 (8.6%) women achieved healthy aging. After adjustment for covariates including MVPA, each increment of 2 hours per day in sitting watching television was associated with a 12% reduction in the odds of healthy aging.

In contrast, each increase of 2 hours per day in LPA-Work was associated with a 6% increase in the odds of healthy aging. Replacing 1 hour of sitting watching television with LPA-Home, LPA-Work, or MVPA was associated with increased odds of healthy aging. Among participants who slept 7 hours per day or less, replacing television time with sleep was also associated with increased odds of healthy aging.

In this cohort study, longer television watching time decreased odds of healthy aging, whereas LPA and MVPA increased odds of healthy aging and replacing sitting watching television with LPA or MVPA, or with sleep in those who slept 7 hours per day or less, was associated with increased odds of healthy aging, providing evidence for rearranging 24-hour behavior to promote overall health.

Technology.

Shulman, H.C., et al (2024) **Reading dies in complexity: Online news consumers prefer simple writing.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adn2555 (available as a free pdf)

Authors' abstract: Over 30,000 field experiments with The Washington Post and Upworthy showed that readers prefer simpler headlines (e.g., more common words and more readable writing) over more complex ones. A follow-up mechanism experiment showed that readers from the general public paid more attention to, and processed more deeply, the simpler headlines compared to the complex headlines.

That is, a signal detection study suggested readers were guided by a simpler-writing heuristic, such that they skipped over relatively complex headlines to focus their attention on the simpler headlines. Notably, a sample of professional writers, including journalists, did not show this pattern, suggesting that those writing the news may read it differently from those consuming it. Simplifying writing can help news outlets compete in the competitive online attention economy, and simple language can make news more approachable to online readers.