

THIS PLACE EXISTS

Earth's Craziest Real Places



THE ROBOT BOOK CLUB



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Every place in this book is real. Photographs began as documentary images of each location and were digitally cleaned for print; maps and meters are original illustrations created for this book.

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*For the map-gazers, the question-askers, and every
kid who looks at our weird, wild planet and asks:
wait, is that real?*

HOW TO READ THIS BOOK

Every place in this book gets the same treatment, because every place in this book is held to the same rule: **it has to be real**. Real coordinates. Real photographs. Real science.

 The **photo** at the top of the page shows the place as it actually looks — cleaned up for print, never invented.

 The **map dot** answers the first question everyone asks: *where on Earth is that?* You could type the coordinates into any map app and go look.

 The **story** explains *why* the place exists — the heat, water, chemistry, life, and time that built it.

 The **If You Went There** card reports what your own eyes, ears, and nose would tell you, plus the hard stats.

 The **Weird-o-Meter** rates each place from 1 bolt (mildly odd) to 5 bolts (the planet's finest weirdness).

One more thing. When scientists are still arguing about a place, this book says so. An honest mystery is worth more than a made-up answer — and the last chapter is nothing but honest mysteries.

WAIT, THAT'S REAL?

You're scrolling online or flipping through a magazine, and you see it. A lake the color of melted bubblegum. A bay glowing with electric blue light in the dead of night. Your brain instantly throws up a red flag: *Fake*. Someone just went wild with a photo-editing app, right? But then you look closer. You see a set of numbers. You type those coordinates into a map, and your screen zooms in on a completely real spot on our ridiculous planet. That exact feeling—the whiplash of realizing *wait, this is actually real?*—is the entire reason you are holding this book.

The One Rule of This Book

We only have one rule here: absolutely no faking. Every single place you are about to see is one hundred percent real, documented, and checkable. We give you the exact coordinates so you can hunt them down on your own satellite maps. You get real photographs and the real science behind how they formed.

Sometimes, even the scientists are still scratching their heads about exactly how a place got to be so bizarre. When that happens, we'll tell you they're still arguing about it. Why? Because an honest mystery is a thousand times better than a made-up answer.

Earth Out-Weirds Fiction

If you were writing a sci-fi movie, you'd probably design some pretty wild alien worlds. But honestly, Earth has you beat. Our planet doesn't need special effects. It just uses a handful of incredibly patient tools—heat, water, wind, chemistry, weird little microbes, and millions of years of time.

When those forces crash into each other in just the right (or wrong) ways, they build landscapes that no author would dare invent. They sculpt rocks into impossible shapes, paint rivers in neon colors, and create zones where the normal rules of nature seem to glitch out completely.

How to Read a Page

Every time you turn the page, you're going to travel to a new, mind-bending location. First, look at the giant photograph and the world map—that little dot proves it exists on the exact same planet you do. Then, dive into the story to find out the strange science of *why* the place exists.

To really put you there, check the "If You Went There" card. This is your sensory cheat sheet: what the air smells like, what the ground feels like beneath your boots, and what you'd hear if you stood right in the middle of it. Finally, look at the Weird-o-Meter. We rate every spot from 1 to 5 bolts of pure weirdness. Grab your gear and turn the page.

CHAPTER 1

GLOWING AND TECHNICOLOR

Some places didn't get the memo that nature is supposed to be green and brown. These ones glow electric blue, stripe themselves like candy, and turn whole lakes pink.

6 PLACES · ALL REAL



Waitomo Glowworm Caves



Kawah Ijen



Grand Prismatic Spring

Coming up in this chapter

WAITOMO GLOWWORM CAVES

A pitch-black underground river illuminated by thousands of glowing, hungry maggots dangling sticky snares from the ceiling.



When you look up in the Waitomo Caves, you aren't seeing a neon-blue starry sky. You're looking at the glowing bottoms of thousands of hungry maggots. The "glowworms" are actually the larval stage of a fungus gnat called *Arachnocampa luminosa*, an insect found nowhere else but New Zealand.

The neon blue-green glow is a deadly trap powered by bioluminescence. Inside its tail, the larva mixes an enzyme called luciferase with a molecule called luciferin, ATP, and oxygen. This chemical reaction produces pure light without any heat. Like a tiny, glowing anglerfish, the larva uses this biological beacon to lure flying prey—like midges and moths—out of the dark.

To catch its dinner, each larva drops up to 70 sticky silk threads from the cave ceiling, coating them in beads of mucus. When a bug flies toward the light, it gets snared in the slimy web, and the larva simply reels it in to eat. The hungrier the maggot, the brighter it glows. It had better eat up, too—once the larva grows into an adult fly, it has no mouth and lives just a few days to mate and lay eggs.

Where on Earth?



Find it yourself: 38.3° S, 175.1° E

IF YOU WENT THERE

What Hits You First

You glide on a boat through pitch-black darkness. The 13°C air feels cool and damp, smelling of wet limestone and river mud. The only sound is the gentle drip of water. Above you, thousands of tiny biological lights create a vibrant, neon blue-green galaxy across the cave ceiling.

LOCATION	Waitomo, North Island, New Zealand
SIZE	Over 1,300 meters of cave passages
BEST TIME	Year-round
EGGS PER FEMALE	About 130 — laid before the adult dies

WEIRD-O-METER

Seriously bizarre

KAWAH IJEN

Super-heated sulfur gases escape this volcano and ignite in the air, creating spectacular, leaping electric-blue flames.



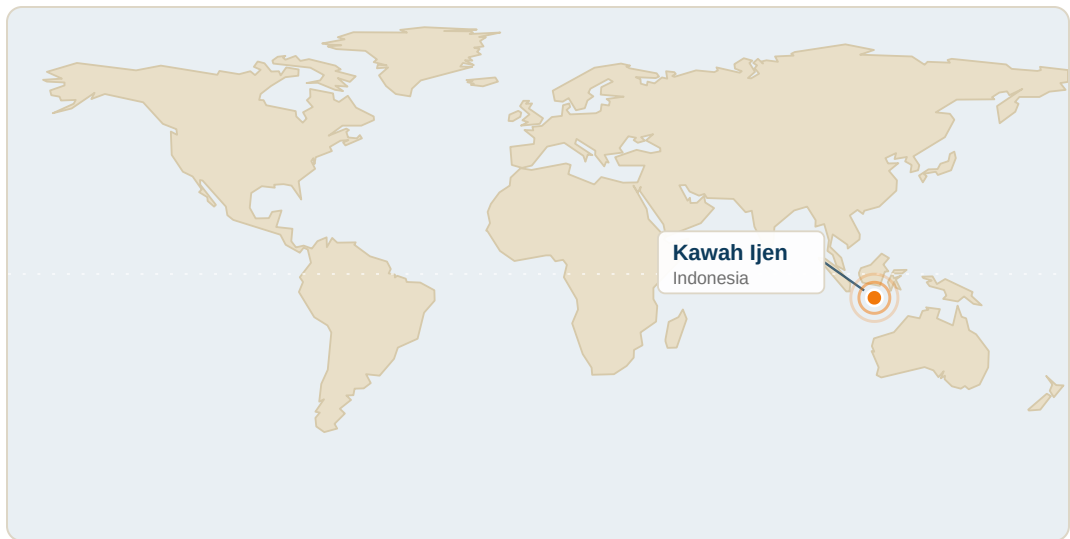
The internet is full of rumors about a magical volcano in Indonesia that erupts "blue lava." Let's bust that myth right now: naturally occurring blue lava doesn't exist on Earth. Lava is molten rock, and it always glows red or orange. But Kawah Ijen *does* have glowing blue rivers spilling down its rocky walls—they just aren't made of rock. They are massive chemical fires.

Deep inside the volcano, immense amounts of highly pressurized sulfur gas are heated to a blistering 600°C (1,112°F). When this super-heated gas escapes through cracks in the rock (called fumaroles) and hits oxygen-rich air at the surface, it spontaneously

ignites. The intense heat causes "electronic excitation." The sulfur's electrons get energized, and when they return to a stable state, they release their excess energy as a brilliant blue-violet light.

Sometimes, this burning sulfur gas condenses into a liquid. It continues to burn blue as it flows down the crater walls toward the world's deepest, highly acidic turquoise crater lake. It looks exactly like neon lava, proving that real chemistry is way cooler than fake internet photos.

Where on Earth?



Find it yourself: 8.1° S, 114.2° E

IF YOU WENT THERE

What Hits You First

Your lungs and eyes burn from the thick, toxic sulfur dioxide gas. You hear gas hissing from stone pipes and feel brittle, bright yellow sulfur rocks crunching under your boots. Peering into the pitch-black crater, you see electric neon-blue flames leaping into the air and spilling down the walls.

LOCATION	East Java, Indonesia
SIZE	World's largest blue flame area
BEST TIME	Midnight to dawn — invisible in daylight
FLAME HEIGHT	Up to 5 meters (16 feet)

WEIRD-O-METER



Planet's finest weirdness

GRAND PRISMATIC SPRING

A massive, boiling pool of water painted like a giant rainbow eye by heat-loving microscopic extremophiles.



Deep underneath Yellowstone National Park sits a massive chamber of bubbling magma. This geothermal engine pushes mineral-rich, near-boiling water to the surface, creating the largest hot spring in the United States. But what makes the Grand Prismatic Spring truly mind-bending isn't just its massive size—it's the neon, rainbow-colored rings that make it look like a giant alien eye.

The deep azure-blue center is a blistering 87°C (189°F). It is completely sterile—no life can survive that extreme heat. The bright blue color isn't a reflection of the sky, nor is it bacteria; it's a physical trick of light caused by suspended particles in the

incredibly deep, pure water scattering blue light rays. But as the boiling water spreads outward from the center vent, it cools, creating distinct temperature zones that act as a perfect habitat for thermophiles (heat-loving bacteria).

At 74°C (165°F), yellow *Synechococcus* cyanobacteria thrive. A little further out, at a slightly cooler 65°C (149°F), orange *Chloroflexi* bacteria take over. Finally, at 55°C (131°F), a massive diversity of microbes creates a reddish-brown outer ring. To survive the harsh, high-altitude sunlight without frying, these microscopic extremophiles pump out massive amounts of carotenoid pigments—a biological sunscreen that just happens to paint the earth in technicolor.

Where on Earth?



Find it yourself: 44.5° N, 110.8° W

IF YOU WENT THERE

What Hits You First

You smell the heavy, rotting-egg stench of sulfur before you even see the water. Pushing through thick, white clouds of hissing steam, you hear the constant, rumbling bubble of boiling water. The fog clears, revealing a massive, deep azure-blue pool ringed by blindingly bright crusts of yellow, orange, and red.

LOCATION	Yellowstone National Park, Wyoming, USA
SIZE	112 meters wide, 37 meters deep
BEST TIME	Mid-summer, to avoid thick steam
WATER DISCHARGE	2,100 liters of near-boiling water per minute

WEIRD-O-METER



Seriously bizarre

RAINBOW MOUNTAIN (VINICUNCA)

Hidden under ice until a few years ago, this 17,060-foot mountain is naturally striped in fourteen pastel colors.



For centuries, Rainbow Mountain was a secret kept by the ice. It was virtually unknown to the outside world until around 2013 to 2015. Rising temperatures melted the glaciers that capped the mountain, revealing a landscape that looks like it was painted by a giant brush. But those pastel ribbons of pink, red, lavender, turquoise, and yellow aren't a recent creation—they are a 24-million-year-old masterpiece.

Long before this was a towering mountain, these colorful layers were just ordinary sand, clay, and mud resting at the bottom of an ancient ocean. Over millions of years, the slow, unstoppable collision of tectonic plates crumpled the Earth's crust, pushing

that ocean floor thousands of feet into the sky to form the Andes Mountains.

Once the ice finally melted away, these stacked, mineral-rich layers were exposed to the air and began a process called mineral oxidation—essentially, the mountain is rusting. Red clay turns pink, quartz sandstone looks white, marl creates lavender, copper oxide flashes turquoise, and limonites rust into yellow-browns. Don't be fooled by heavily photoshopped, neon-bright internet pictures, though. The real mountain is a stunning canvas of soft, natural pastel earth tones.

Where on Earth?



Find it yourself: 13.9° S, 71.3° W

IF YOU WENT THERE

What Hits You First

You gasp for breath in the severely thin, freezing air, battling biting winds to reach the summit. The smell of dry earth and passing alpaca herds fills your nose. Around you, sweeping ridges of pastel pink, lavender, and turquoise earth roll outward, set against a backdrop of distant snow-capped peaks.

LOCATION	Cusco Region, Andes Mountains, Peru
SIZE	5,200 meters (17,060 feet) high
BEST TIME	April to October, to avoid snow
COLOR LAYERS	14 distinct layers of ancient minerals

WEIRD-O-METER



Seriously bizarre

DALLOL HYDROTHERMAL SYSTEM

A boiling, hyper-acidic alien landscape of neon green pools where summer temperatures are literally lethal.



Located at the Afar Triple Junction where three tectonic plates are violently pulling apart, magma bubbles just a few kilometers below the surface. This underground furnace heats groundwater, which shoots up through an ancient, buried marine salt deposit. When this boiling brine hits the air, it creates an alien world of crusty salt flats and mineral pillars in violent, rusting shades of neon green, bright yellow, and orange. Unlike many other colorful places on Earth, these vibrant hues aren't made by living extremophiles acting as microscopic sunscreen. They are the result of pure chemistry, as heavy metals, iron oxides, and sulfur rapidly oxidize in the open air.

Dallol is a "polyextreme" environment: its springs are ten times saltier than the ocean, reach temperatures of 109°C (228°F), and are intensely acidic. It's so hostile that scientists are locked in a fierce astrobiology debate over whether anything can survive there. In 2019, one research team claimed to have discovered ultra-small archaea living in the liquid. Months later, a rival team completely refuted them, arguing the pools are 100% sterile and the supposed "cells" were actually *abiotic biomorphs*—microscopic mineral balls that just happen to look exactly like bacteria. The mystery remains open: just because a planet has liquid water doesn't mean life can survive it.

Where on Earth?



Find it yourself: 14.2° N, 40.3° E

IF YOU WENT THERE

What Hits You First

The deadly 55°C (131°F) heat hits you like a physical wall, and the air burns your lungs with the sharp stench of toxic chlorine and sulfur dioxide gases. You hear the furious bubbling of hot springs as you stare across a rusted salt flat painted in eye-popping shades of emerald green and bright yellow.

LOCATION	Danakil Depression, Ethiopia
SIZE	Expansive volcanic salt flat
BEST TIME	Nov–Feb (summer heat is lethal)
LOWEST PH	-1.7 — mind-bogglingly acidic

WEIRD-O-METER



Planet's finest weirdness

LAKE HILLIER

Ringed by dark forests and the ocean, this extremely salty lake looks exactly like a giant, bubblegum-pink milkshake.



For decades, scientists thought this hypersaline (extremely salty) lake got its bizarre color from a single type of algae. But a massive 2022 metagenomic study proved that Lake Hillier is actually a massive team effort. The pink hue is created by a diverse consortium of polyextremophiles—microscopic survivalists adapted to multiple deadly conditions.

To survive the intense Australian sunlight and toxic salt levels, bacteria like *Salinibacter ruber* and archaea like *Halorubrum* work together like a microscopic pigment factory. They pump out massive amounts of red and orange carotenoid

pigments, which act as a heavy-duty biological sunscreen for their cells. Millions of these tiny organisms dye the entire lake an opaque, milky pink.

However, the lake isn't magically pink forever. It depends on the salt stress to keep the microbes churning out their colorful sunscreen. In 2022, extreme rainfall flooded the lake with fresh water, diluting the salt. The microscopic crew took a break, and the lake temporarily turned a pale blue-grey until evaporation slowly cranked the salt levels back up!

Where on Earth?



Find it yourself: 34.1° S, 123.2° E

IF YOU WENT THERE

What Hits You First

Flying over, you see a giant puddle of opaque, bubblegum-pink milkshake. Standing on the stark white salt crust, you smell the dense green eucalyptus and paperbark forests surrounding you. Just a few dozen meters away, you hear the deep blue waves of the Southern Ocean crashing against the island.

LOCATION	Middle Island, Western Australia
SIZE	600 meters in length
BEST TIME	Summer, when evaporation concentrates the salt
MICROBIAL GENOMES	21 distinct genomes reconstructed in a 2022 study

WEIRD-O-METER



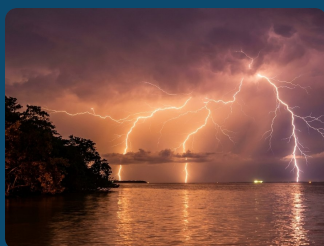
Seriously bizarre

CHAPTER 2

DEFIES BELIEF

A river hot enough to brew tea. A storm that shows up for work almost every night. A waterfall the color of blood. All real, all measured, all explained by science.

6 PLACES · ALL REAL



Catatumbo Lightning



The Door to Hell



Blood Falls

Coming up in this chapter

CATATUMBO LIGHTNING

A natural, everlasting storm that fires 1.78 million lightning bolts a year without making a sound.



The Catatumbo Lightning isn't just a normal thunderstorm—it's a relentless, self-sustaining atmospheric machine. Firing a staggering 1.78 million lightning strikes every year, this "everlasting storm" holds a Guinness World Record. But the most eerie part? You likely won't hear any booming thunder. Because the storm rages up to five kilometers high in the atmosphere, the endless flashing strobe light is completely silent from the ground.

Why does it happen here? It's all about physics and topography. Lake Maracaibo acts as a massive atmospheric bowl, cupped by the towering ridges of the Andes and Perijá Mountains. During the day, the hot tropical sun evaporates lake water. At dusk, a wind

current called the Caribbean Low-Level Jet acts like a giant snowplow, shoving this warm, moist air into the mountain walls and forcing it violently upward into the freezing upper troposphere.

When those humid water droplets smash into high-altitude ice crystals, they generate massive static electrical charges. For years, people claimed that ionized methane gas from local bogs caused the lightning, but atmospheric physicists have entirely debunked that myth. The real mystery today? The storm mysteriously shut down for three months in 2010. Scientists are still debating whether a severe El Niño drought or local deforestation temporarily broke Earth's biggest lightning engine.

Where on Earth?



Find it yourself: 9.3° N, 71.7° W

IF YOU WENT THERE

What Hits You First

Standing on the shores of Lake Maracaibo, you watch the night sky flicker with a ceaseless, silent strobe light. The clouds glow in vibrant hues of phosphorescent pink, purple, and orange. The storm is so high above you that you hear no thunder—just continuous flashes bright enough to read a book by.

LOCATION	Lake Maracaibo, Venezuela
SIZE	Storms reach 1 to 5 kilometers high
BEST TIME	September and October
ANNUAL STRIKES	1.78 million lightning flashes

WEIRD-O-METER



Seriously bizarre

THE DOOR TO HELL

A catastrophic drilling collapse created a 230-foot desert sinkhole that has roared with continuous fire for over half a century.



Half a century ago, petroleum engineers hunting for fossil fuels in the Karakum Desert accidentally punctured a massive underground cavern filled with natural gas. The cavern's roof suffered a catastrophic failure, swallowing the drilling rig whole and tearing open a giant sinkhole. Highly pressurized methane gas began pouring out of the crater, threatening to suffocate nearby wildlife and the local village of Darvaza.

To prevent a toxic disaster, scientists decided to burn the methane away in a process called "flaring." They ignited the gas, expecting the fuel to burn off in a few weeks. They wildly underestimated the size of the subterranean reserves. The sinkhole has

been roaring with a blistering fire ever since. Today, the crater still pumps out an astonishing 1,300 to 1,960 kilograms of methane every single hour.

Because Soviet records are missing or classified, historians still debate the exact timeline. The most popular narrative says the rig collapsed in 1971. However, local Turkmen geologists argue the sinkhole actually formed in the 1960s and bubbled quietly until it was deliberately lit in the 1980s. (And if you read online that desert spiders purposefully hurl themselves into the fire? It's a myth. Spiders are attracted to the light, but scientists have found zero proof of a mass plunge.)

Where on Earth?



Find it yourself: 40.3° N, 58.4° E

IF YOU WENT THERE

What Hits You First

Approaching in the pitch-black desert, you first notice a fierce orange glow on the horizon. Standing at the edge, the heat is so blistering you can't stay in one place for long. The air smells heavily of sulfur and burning methane, and the high-pressure gas combusting sounds like the unrelenting roar of a jet engine.

LOCATION	Karakum Desert, Turkmenistan
SIZE	230 feet wide, 98 feet deep
BEST TIME	Nighttime, for dramatic fiery contrast
METHANE FLOW	1,300 to 1,960 kilograms per hour

WEIRD-O-METER



Seriously bizarre

BLOOD FALLS

A vivid, dark-red waterfall of ancient, rusting saltwater oozes directly out of a pristine white glacier.



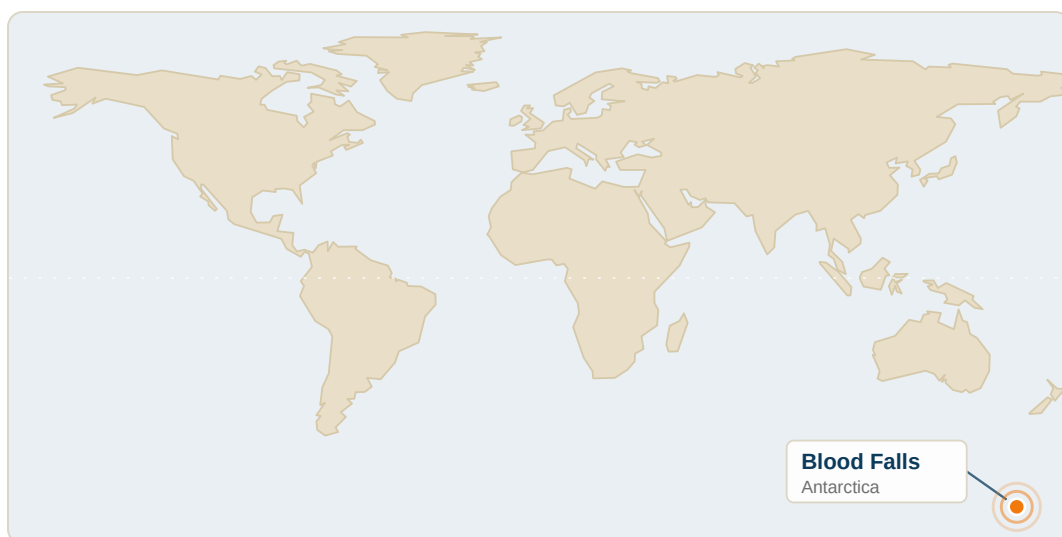
When geologist Griffith Taylor discovered Blood Falls in 1911, he thought the gruesome, dark-red sludge staining the pristine Taylor Glacier was caused by red algae. He was wrong. The real culprit is extreme geochemistry. Deep beneath 400 meters of ice, a hidden, hypersaline lake has been trapped in complete darkness without oxygen for 1.5 million years.

Over millennia, as the glacier's freshwater froze, the remaining liquid became an intensely salty brine, scraping massive amounts of iron from the bedrock—a process called cryoconcentration. When immense pressure forces this liquid 91 meters up

through a network of fissures to the glacier's snout, the dissolved iron hits the oxygen-rich air. In a flash of chemical oxidation, it turns into ferric oxide. Essentially, the water rusts as it falls.

But how does liquid water flow through solid ice in sub-zero Antarctica? For over a century, this was a total mystery. It wasn't until 2017 that scientists using radio-echo sounding (radar) proved that the hypersaline water releases a tiny bit of latent heat when small amounts of it *do* freeze. This micro-heat acts as a thermal engine, warming the surrounding liquid just enough to keep Antarctica's weirdest plumbing system flowing.

Where on Earth?



Find it yourself: 77.7° S, 162.3° E

IF YOU WENT THERE

What Hits You First

You stand in an eerily silent, freezing, and blindingly white expanse of pristine ice. The environment is completely devoid of visible life. Suddenly, spilling down the face of the glacier onto the frozen surface of Lake Bonney, you spot it: a slow-oozing, dark-red sludge that looks exactly like a gruesome crime scene.

LOCATION	Taylor Glacier, Victoria Land, Antarctica
SIZE	91-meter subglacial brine network
BEST TIME	November to February (Antarctic summer)
TIME TRAPPED	1.5 million years in darkness

WEIRD-O-METER



Planet's finest weirdness

THE BOILING RIVER (SHANAY-TIMPISHKA)

Tucked deep in the Amazon is a crystal-clear, bubbling river hot enough to instantly cook anything that falls in.



Thermal rivers are supposed to exist right next to active volcanoes, not in the middle of the Amazon rainforest. For years, Western academics dismissed the Boiling River—locally known as Shanay-Timpishka—as a ridiculous jungle myth. It wasn't until 2011 that geoscientist Andrés Ruzo hiked into the Peruvian rainforest and scientifically proved it was real. The most shocking part? The nearest volcano is over 700 kilometers away.

So, what heats a jungle river to a blistering 99.1°C (210.4°F)? A process driven by the Earth's natural geothermal gradient. Rainwater falls high in the distant Andes mountains and percolates deep down into the Earth's crust, where it is superheated by the mantle. A massive tectonic fault zone then acts like a high-pressure plumbing system, shooting this boiling groundwater back up to the surface and injecting it directly into the riverbed springs.

Some locals originally feared the heat was caused by an illegal oil drilling accident. However, isotopic and geochemical testing proved the water is entirely natural—and actually contains fewer dissolved minerals than commercial bottled water. It flows as a continuous 6.3-kilometer stretch of bubbling, lethal rapids, a geological marvel hiding in plain sight.

Where on Earth?



Find it yourself: 8.8° S, 74.5° W

IF YOU WENT THERE

What Hits You First

Deep in the Amazon, you sweat in the incredibly hot, humid air. A thick blanket of white steam rises through the green canopy. Over the typical calls of jungle birds and insects, you hear the violent bubbling of crystal-clear water—a lethal river ready to instantly cook any animal unlucky enough to slip in.

LOCATION	Huánuco Region, Peru
SIZE	6.3 kilometers of thermal rapids
BEST TIME	May to October (dry season)
MAX WATER TEMP	99.1°C (210.4°F)

WEIRD-O-METER



Seriously bizarre

CAVE OF THE CRYSTALS

Deep underground, a blistering-hot cave houses massive, 39-foot-long geometric crystals that look like a real-life alien fortress.



In the year 2000, brothers Juan and Pedro Sanchez were drilling a new tunnel in a Mexican silver mine 1,000 feet underground when they broke into something impossible. It wasn't just a cavern; it was a real-life Fortress of Solitude. Blindingly white, translucent geometric beams crisscrossed the space, dwarfing the humans who found them. But this fortress is lethal. The cave sits directly above a subterranean magma chamber that cranks the environment to a blistering 60°C (140°F) with 100% humidity. Without a specialized refrigerated suit, a human can only survive here for about ten minutes before fluid starts condensing inside their lungs.

So how did crystals grow to the size of school buses? It is a masterpiece of thermodynamics and a 500,000-year-long slow cooker. The cavern was flooded with groundwater packed with a dissolved mineral called calcium sulfate. Because the magma chamber below kept the water at a perfectly stable "Goldilocks" temperature of 58°C for half a million years, the minerals slowly dissolved and reprecipitated as massive gypsum (selenite) crystals. Instead of forming millions of tiny crystals, this perfectly steady heat allowed a few to grow to monumental proportions.

If you see internet rumors claiming these crystals have "healing energies," don't fall for it—their existence is the result of strict, awesome physics. Today, the cave is completely off-limits. When mining operations stopped, the pumps were turned off, and the cave was intentionally allowed to re-flood with water, preserving these 55-tonne giants in their natural boiling bath for the future.

Where on Earth?



Find it yourself: 27.8° N, 105.5° W

IF YOU WENT THERE

What Hits You First

Stepping into the cavern is like walking into a blast furnace. The suffocating, 100-percent humidity instantly makes it hard to breathe. Flashlights reflect off blindingly white, translucent crystal pillars that dwarf you. The heat is so intense you can only survive ten minutes before fluid begins to condense in your lungs.

LOCATION	Naica, Chihuahua, Mexico
SIZE	Crystals up to 39 feet (12m) long
BEST TIME	Inaccessible (intentionally re-flooded)
MAX CRYSTAL WEIGHT	55 tonnes

WEIRD-O-METER



Planet's finest weirdness

SPOTTED LAKE

When summer heat dries this Canadian lake, it transforms into a polka-dot mosaic of 400 colorful, crusty pools.

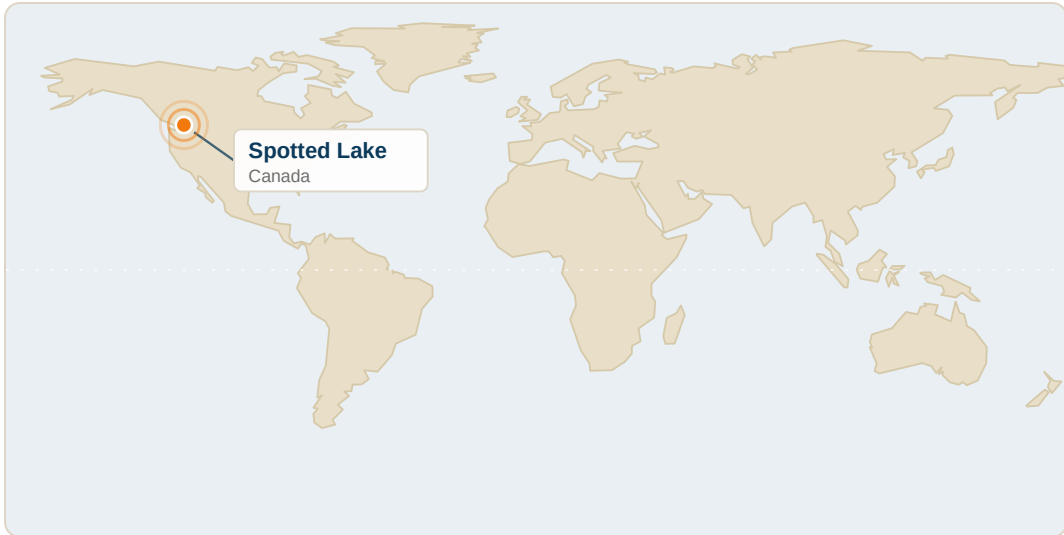


Spotted Lake (known as *Khiluk* to the Syilx Okanagan Nation) is an *endorheic* basin, meaning water flows in but can never flow out to the sea. Over thousands of years, rain and snowmelt have washed massive amounts of minerals from the surrounding volcanic hills into this single, inescapable spot.

When the intense summer heat of the valley hits, most of the lake's water evaporates. As the liquid vanishes, the dissolved minerals are left behind until they reach their saturation point. They crystallize and harden into raised, crusty walkways of calcium, sodium, and magnesium sulfate (better known as Epsom salt). These natural bridges divide the remaining brine into a massive, walkable grid of polka-dot puddles.

The 400 leftover pools look like an alien checkerboard, glowing in bizarre shades of vibrant yellow, pale green, and deep blue. The specific color of each puddle depends on its exact mineral cocktail and the specialized algae thriving inside. While visitors aren't allowed to touch the fragile ecosystem, indigenous peoples have long used the mud for healing. And science backs this up: the lake's massive concentration of natural Epsom salt is clinically proven to soothe skin and muscle inflammation.

Where on Earth?



Find it yourself: 49.1° N, 119.6° W

IF YOU WENT THERE

What Hits You First

Pulling off Highway 3, you look down into the hot, arid valley and see an alien patchwork. You can't walk on the crusty white walkways—the lake is a sacred, protected site—but from the edge, you marvel at hundreds of circular pools glowing vibrant yellow, green, and blue in the blazing summer sun.

LOCATION	Osoyoos, British Columbia, Canada
SIZE	700 meters long and 250 meters wide
BEST TIME	July to August, during maximum evaporation
POOL COUNT	Approximately 400 distinct mineral puddles

WEIRD-O-METER



Seriously bizarre

CHAPTER 3

UNDERGROUND AND HIDDEN

The strangest real estate on Earth is under your feet: crystals the size of school buses, and an ancient city with room for thousands, carved story by story into the dark.

6 PLACES · ALL REAL



Hang Son Doong



Derinkuyu Underground City



Eisriesenwelt

Coming up in this chapter

HANG SON DOONG

A colossal cavern with its own weather system, large enough to swallow a 40-story skyscraper block.



Hang Son Doong is less of a cave and more of a buried world. About 2.5 to 3 million years ago, the massive Rao Thuong and Khe Ry rivers found a 100-meter-wide crack—a fault line—in the region's ancient limestone bedrock. Over time, the fast-moving water and the chemical dissolution of pure calcium carbonate chewed through the rock, hollowing out a cavern so astronomically huge it holds 38.5 million cubic meters of space.

In a void this wide, the rock ceiling can't always support its own weight. In weak spots, the roof collapsed, creating giant sinkholes known as *dolines*. These skylights acted as massive funnels for rain, sunlight, and windblown seeds. The result is a localized

underground jungle—an ecosystem known as phytokarst—thriving deep beneath the surface, complete with 40-meter-tall trees.

While Son Doong holds the global record for cave volume, scientists are still debating its true boundaries. British divers recently discovered an underwater tunnel linking Son Doong to another cavern, Hang Thung. Geologists are actively updating their maps to include this extra 1.6 million cubic meters, proving Earth’s ultimate subterranean kingdom still has hidden rooms.

Where on Earth?



Find it yourself: 17.5° N, 106.3° E

IF YOU WENT THERE

What Hits You First

You hear the deafening roar of a subterranean river long before you see it. Stepping into the cool, humid air, the scale defies your brain. Where the roof has collapsed, shafts of sunlight illuminate a literal underground jungle. Look up: actual clouds and mist drift near the cave ceiling, floating over forty-meter-tall trees.

LOCATION	Phong Nha-Kẻ Bàng National Park, Vietnam
SIZE	Over 9 km long, up to 200m high
BEST TIME	April — for low water and clear visibility
TOTAL VOLUME	38.5 million cubic meters

WEIRD-O-METER



Seriously bizarre

DERINKUYU UNDERGROUND CITY

A multi-level subterranean city carved into volcanic rock, engineered to hide 20,000 people and their livestock from invading armies.



Ten to 14 million years ago, during the Miocene epoch, massive stratovolcanoes erupted and buried the local landscape in thick layers of ash. Over time, this ash compacted into a porous rock called volcanic tuff. This rock has a brilliant geological superpower: it is incredibly soft and easy to carve with simple hand tools, but when exposed to the air, it oxidizes and hardens into a highly stable structure.

Ancient humans realized this was the ultimate hiding spot. Fleeing from war and religious persecution, early builders—possibly Phrygians or Byzantine Christians—dug straight down. They didn't just scoop out a few basements; they engineered an

astonishing subterranean metropolis. They carved complex ventilation shafts to circulate breathable air up to 85 meters deep, dug wells to access groundwater, and installed massive circular stone doors that could only be rolled shut and locked from the inside.

The wildest part? The map might still be incomplete. While historians know Byzantine Christians used the rock-hewn chapels between the 8th and 12th centuries, some archaeologists suspect the digging started thousands of years earlier. Using ground-penetrating radar, scientists are actively debating whether Derinkuyu secretly connects to other underground cities through undiscovered, multi-kilometer tunnel networks.

Where on Earth?



Find it yourself: 38.4° N, 34.7° E

IF YOU WENT THERE

What Hits You First

Escaping the scorching Anatolian summer, you step into a cool, dry labyrinth. You hear the crunch of grit underfoot and the echoes of voices traveling up ancient ventilation shafts. Claustrophobic, narrow connecting tunnels suddenly open into massive communal chambers, chapels, and stables carrying the faint, ancient scent of earth and carved rock.

LOCATION	Cappadocia, Turkey
SIZE	60-85 meters deep; 8 currently accessible levels
BEST TIME	Spring or autumn
MAX CAPACITY	20,000 people, plus their livestock and food

WEIRD-O-METER



Seriously bizarre

EISRIESENWELT

A bizarre chimney effect pulls freezing winter winds inside a mountain, creating the world's largest dynamic ice cave.



Eisriesenwelt (which translates to "World of the Ice Giants") was initially carved out of a massive limestone karst plateau by the Salzach river during the Pleistocene epoch. Today, it is the world's largest dynamic ice cave, and it exists because the mountain acts like a giant, freezing vacuum cleaner. The cavern has openings at different altitudes, creating a meteorological phenomenon known as a "chimney effect" that yanks massive drafts of air through the 42-kilometer-long system.

During winter, bone-chilling mountain winds get sucked inside, supercooling the limestone rock walls well below the freezing point. When spring arrives, warmer snowmelt from the mountaintop seeps down through cracks in the rock. The second

that liquid water touches the supercooled cave walls, it freezes instantly, building up 33,000 cubic meters of towering blue ice pillars and motionless frozen waterfalls.

You might think a warming planet would easily melt the Ice Giants, but scientists studying the cave with Terrestrial Laser Scanning and Ground Penetrating Radar have uncovered a surprisingly balanced thermal mystery. The cave actually loses its ice mass during the coldest months through *sublimation*—a process where dry winter winds turn solid ice directly into water vapor—only to be repopulated by fresh spring meltwater. Geologists are heavily monitoring the cave to see if rising surface temperatures will eventually shatter this delicate cycle.

Where on Earth?



Find it yourself: 47.5° N, 13.2° E

IF YOU WENT THERE

What Hits You First

You step through a massive funnel entrance on a steep mountain cliff, and the temperature instantly plummets to freezing. Your breath plumes into white clouds in the faint glow of your carbide lamp. Listening to the echo of dripping water, you climb 1,400 wooden steps past towering, crystal-clear columns of blue ice.

LOCATION	Werfen, Austria
SIZE	42 kilometers long (1 kilometer iced)
BEST TIME	May to October (closed in winter)
ICE VOLUME	33,000 cubic meters

WEIRD-O-METER



Genuinely weird

KAZUMURA CAVE

Formed 500 years ago by a flowing river of superheated magma, this giant, glass-walled lava tube drops 1,102 meters.



Most caves are carved over millions of years by the slow, chemical drip of acidic water. Kazumura Cave was carved by fire. Roughly 500 years ago, a massive effusive volcanic eruption from the Kīlauea volcano sent rivers of glowing, basaltic lava rushing down the mountainside. As the flowing magma hit the cool Hawaiian air, the outside chilled and hardened into a thick rock crust, creating a perfect thermal insulator.

Inside this newly formed rock pipeline, the superheated liquid rock just kept flowing like a subterranean river. Because the crust trapped the heat so incredibly well, the magma only cooled about 4°C during its entire 39-kilometer journey. When the

eruption finally stopped, the molten rock simply drained out the bottom, leaving behind a colossal, hollow tube.

Today, Kazumura isn't just a playground for Earth scientists—it's a testing ground for planetary geologists. Satellites have spotted massive "skylight" holes on the Moon and Mars, and scientists suspect they are giant, extraterrestrial lava tubes. Researchers study the inflation and overcrusting processes that formed Kazumura to debate a massive mystery: since Mars has lower gravity than Earth, could alien lava tubes be big enough to house entire human bases without collapsing?

Where on Earth?



Find it yourself: 19.5° N, 155.0° W

IF YOU WENT THERE

What Hits You First

You step into a warm, dark, and damp tunnel that looks like the inside of a giant ceramic pipe. The walls are smooth, glossy, and glazed by fire. Above you, sensitive tree roots dangle like pale spider webs, while your boots crunch over a floor of sharp, black volcanic rock—the crust of a collapsed, ancient lava lake.

LOCATION	Island of Hawai‘i, USA
SIZE	65.5 kilometers long, 1,102 meters deep
BEST TIME	Year-round on private guided tours
ELEVATION DROP	1,102 meters from top entrance to lowest point

WEIRD-O-METER



Seriously bizarre

WIELICZKA SALT MINE

Miners spent 700 years transforming an evaporated prehistoric sea into a massive underground city carved entirely from salt.



About 13.5 million years ago during the Miocene epoch, a shallow sea covering what is now Poland completely dried up, leaving behind a massive crust of salt. Millions of years later, violent orogenic (mountain-building) tectonic movements smashed the region's plates together. The immense pressure folded and shattered this ancient seabed, trapping huge blocks of pure green salt in thick layers of underground clay.

For over 700 years, humans burrowed down to get it. Using hand tools, water-spray dissolution, and eventually modern machines, miners hollowed out over 9.4 million cubic meters of rock. They didn't just dig a quarry; they built an underground world.

Stretching 327 meters deep, the mine features 2,328 colossal chambers, complete with brilliant chandeliers, statues, and entire chapels sculpted right out of the solid gray rock-salt.

But hollowing out a mountain comes with a catch. Under extreme pressure, salt undergoes "convergence"—a slow, plastic deformation where the solid walls literally warp and flow. Since a town of 20,000 people sits right above the mine, preventing a massive sinkhole is crucial. Today, geologists fiercely debate the best way to measure the shifting walls, arguing whether high-tech 3D Terrestrial Laser Scanning or highly sensitive traditional wire extensometers are best to keep this subterranean masterpiece from caving in.

Where on Earth?



Find it yourself: 50.0° N, 20.1° E

IF YOU WENT THERE

What Hits You First

You step into a colossal, timber-supported chamber and instantly taste the crisp, dry salt on your lips. Looking up, light catches an intricate chandelier carved purely from gray rock-salt. When you speak, your voice creates long, reverberating echoes that bounce endlessly down miles of dark, hand-carved galleries.

LOCATION	Wieliczka, Poland
SIZE	327 meters deep, 245 kilometers long
BEST TIME	Year-round (immune to surface weather)
EXCAVATED VOLUME	7.5 million cubic meters

WEIRD-O-METER



Seriously bizarre

CUEVA DE VILLA LUZ

This highly toxic cave features a milky-white river and dripping stalactites of bacteria that sweat battery acid.



Deep in the Mexican jungle, a network of thermal springs pumps massive amounts of toxic hydrogen sulfide gas into Cueva de Villa Luz. This is the exact same gas that gives rotten eggs their terrible smell. In most places on Earth, this gas is lethal. But here, extreme, sulfur-loving bacteria treat it like an all-you-can-eat buffet.

These extremophile microbes consume the gas, oxidize it, and excrete sulfuric acid as a waste product. Billions of them clump together on the ceiling to form gelatinous, mucus-like colonies that scientists officially named "snottites." These dripping snot-stalactites sweat liquid with a pH between 0 and 3.5—making them as violently

corrosive as car battery acid. The acid physically burns away the limestone walls, rapidly enlarging the cavern and turning hard rock into soft gypsum paste. This extreme rock-melting process is called sulfuric-acid speleogenesis.

Despite the deadly air and a stream running opaque white with suspended sulfur, the cavern bursts with life. The massive bacterial buffet feeds an entire food web, including huge populations of "blind sardines." Today, geologists still fiercely debate a major mystery: is the cave primarily being hollowed out by background chemical reactions in the air and water, or by the direct, biological acid-sweat of the extremophile snottites?

Where on Earth?



Find it yourself: 17.5° N, 92.8° W

IF YOU WENT THERE

What Hits You First

You step into the damp gloom, and your eyes immediately start to water and burn. Without a heavy-duty respirator, the violently toxic, rotten-egg stench of hydrogen sulfide makes you nauseous. Sunlight pierces through holes in the ceiling, illuminating a milky-white river and slimy, mucus-like strings dripping highly corrosive acid.

LOCATION	Tapijulapa, Tabasco, Mexico
SIZE	Roughly 2 kilometers of mapped underground river.
BEST TIME	End of the dry season.
ACID STRENGTH	pH 0 to 3.5 — corrosive as battery acid.

WEIRD-O-METER



Planet's finest weirdness

CHAPTER 4

ISLANDS OF THE STRANGE

Cut a piece of land off from the world for long enough and it starts inventing its own rules — trees like umbrellas from another planet, and an island run by rabbits.

6 PLACES · ALL REAL



Socotra



Snake Island (Ilha da Queimada Grande)



Okunoshima

Coming up in this chapter

SOCOTRA

Millions of years of tectonic isolation turned this desert island into an alien world of bleeding, umbrella-shaped trees.



Welcome to a fragment of the ancient supercontinent Gondwanaland. Millions of years ago, a massive chunk of continental rock ripped away from the African and Arabian tectonic plates. This ancient tectonic divorce stranded Socotra in the Arabian Sea. Cut off from the mainland gene pool, life here had to play by totally new rules to survive the harsh, xeric shrubland climate. The island became a factory for extreme endemism, churning out bizarre species found nowhere else on Earth—including 37% of its plants and 90% of its reptiles.

The ultimate survivor is the Dragon's Blood tree (*Dracaena cinnabari*). To stay hydrated with barely any rain, it evolved a canopy that looks like a giant, inside-out umbrella. This strange shape acts as a massive funnel, capturing moisture from the morning mist and sending it straight down the branches to its roots. If scratched, the tree bleeds a thick, crimson sap—a biological resin synthesized to fight off pests and diseases.

While viral posts often call Socotra an "untouched" alien world, that's a total myth. Over 60,000 people actually live here, carefully managing this weird, fragile ecosystem through traditional pastoralism, while scientists debate how best to protect its one-of-a-kind biology from climate change.

Where on Earth?



Find it yourself: 12.5° N, 53.7° E

IF YOU WENT THERE

What Hits You First

You step into a dusty desert smelling of sweet, metallic resin. The Arabian Sea wind howls continuously, rustling the stiff, sword-like leaves of thousands of green, umbrella-shaped trees dotting the limestone plateau. If you scrape a trunk, thick, dark crimson sap bleeds out and pools on the rocks like actual blood.

LOCATION	Yemen (Arabian Sea)
SIZE	3,796 km² (1,465 sq miles)
BEST TIME	October–April (avoiding monsoon winds)
ENDEMIC LAND SNAILS	95% — found nowhere else on Earth

WEIRD-O-METER



Planet's finest weirdness

SNAKE ISLAND (ILHA DA QUEIMADA GRANDE)

Trapped by rising seas, ordinary snakes evolved into tree-dwelling, bird-hunting assassins with flesh-melting venom.



About 11,000 years ago, melting Ice Age glaciers caused eustatic sea levels to rise across the globe. This rushing water swallowed the land bridge connecting a rocky hill to mainland Brazil, trapping a population of ordinary pit vipers on a newly formed, isolated island.

This geographical lockdown triggered a dramatic case of "allopatric speciation." With no ground-dwelling mammals left to eat, the snakes faced starvation. Through rapid natural selection, they moved into the canopy to ambush migratory songbirds. But if a

bitten bird flew away before dying, the snake still starved. To survive, the snakes had to upgrade their biological weapons.

The result is the golden lancehead viper, a hyper-specialized reptile armed with fast-acting hemotoxic venom three to five times deadlier than its mainland cousins. The venom is so potent it practically melts avian tissue, killing birds almost instantly. While local legends claim the island crawls with five snakes per square meter, biologists estimate the true population is between 2,000 and 4,000. That is still dense enough that the Brazilian Navy has made visiting strictly illegal.

Where on Earth?



Find it yourself: 24.5° S, 46.7° W

IF YOU WENT THERE

What Hits You First

You approach steep, jagged rock cliffs plunging into the churning Atlantic. Stepping into the stiflingly humid rainforest, the air smells of salt spray and rotting vegetation. In the eerie silence, you hear the rustle of dry leaves—the terrifyingly close movement of a golden lancehead coiled in the yellow-green foliage.

LOCATION	São Paulo coast, Brazil
SIZE	430,000 m ² (106 acres)
BEST TIME	Never — illegal for civilians
MAX SNAKE DENSITY	1 per square meter

WEIRD-O-METER



Planet's finest weirdness

OKUNOSHIMA

Hundreds of aggressively friendly feral bunnies swarm the vine-choked ruins of a top-secret World War II poison gas factory.



Between 1927 and 1929, the Imperial Japanese Army built a highly classified chemical weapons facility here, literally erasing Okunoshima from public maps. The factories churned out over six kilotons of deadly mustard and tear gas before Allied forces finally dismantled the labs and disposed of the chemicals at the end of World War II.

Decades later, a small "founder population" of rabbits was introduced to the island—likely abandoned pets released by schoolchildren in 1971, or animals brought in to attract tourists. What happened next is a spectacular display of exponential biological

growth. Because the island is completely predator-free (dogs and cats are strictly banned) and human visitors constantly subsidize their diets with snacks, the carrying capacity of the ecosystem artificially exploded.

A persistent internet myth claims today's fluffy residents are mutant descendants of test subjects freed from the wartime labs, but historical records prove all WWII test animals were euthanized. The thousands of rabbits begging for snacks today are just completely normal, wildly successful feral bunnies that conquered an abandoned fortress.

Where on Earth?



Find it yourself: 34.3° N, 133.0° E

IF YOU WENT THERE

What Hits You First

Stepping off the ferry, you hear the rustle of underbrush and the soft thumping of paws. Hundreds of feral bunnies swarm you at the sound of a crinkling food bag. Breathing in the salty sea breeze mixed with earthy rabbit pellets, you see fluffy rabbits contrasting sharply against dark, vine-choked concrete ruins of abandoned military forts.

LOCATION	Hiroshima Prefecture, Japan
SIZE	Under 1 km²
BEST TIME	Spring or Autumn
GAS PRODUCED	6 kilotons during WWII

WEIRD-O-METER



Seriously bizarre

CHRISTMAS ISLAND

Triggered by the moon, tens of millions of bright red crabs march out of the jungle all at once.



Christmas Island is home to one of the most spectacular displays of biological lunar tracking on Earth. During the dry season, tens of millions of endemic red crabs (*Gecarcoidea natalis*) hide out in the moist canopy of the island's rainforest. But when the wet season begins, it acts as an environmental trigger, kicking off a massive crustacean road trip.

The true magic lies in the timing. The crabs' mating and spawning are strictly synchronized to the phases of the moon. Females must reach the coast to release their eggs into the ocean precisely before dawn, on a receding high tide, during the last

quarter of the moon. This precise lunar schedule is an evolutionary lifesaver: it ensures tidal currents carry the hatching larvae safely out to sea while minimizing the risk of the mothers being swept away.

After developing in the ocean, the babies return as tiny "megalops," swarming back up the island's cliffs to become ecosystem engineers of the forest floor. But nature is unpredictable. Scientists actively debate why survival rates swing so wildly. They still don't fully understand why some years see a massive "bumper" crop of returning babies, while in other years, shifting ocean currents or hungry predators wipe out nearly every larva adrift at sea.

Where on Earth?



Find it yourself: 10.5° S, 105.6° E

IF YOU WENT THERE

What Hits You First

You stand in the tropical rain, smelling wet earth and the briny tang of the ocean. The ground is a moving carpet of crimson. It sounds like a torrential downpour of pebbles, but it's actually the clatter of millions of hard, chitinous crab legs clicking against the asphalt.

LOCATION	Australia (Indian Ocean)
SIZE	52 sq miles (135 km ²)
BEST TIME	Nov-Dec (depends on the moon)
EGGS PER FEMALE	100,000 released in one dance

WEIRD-O-METER



Seriously bizarre

FADIOUTH

An entire West African island—from its streets to its cemetery—built from billions of empty clam shells.



Imagine taking out the recycling in the exact same spot for centuries—and accidentally building an island. That is exactly what the Serer and Guelowar peoples did. For hundreds of years, these communities harvested marine mollusks from the rich estuarine waters, scooped out the meat for food, and tossed the empty clam and cockle shells into massive heaps.

Over generations, this relentless biological harvesting engineered actual geology. Billions of discarded calcium carbonate shells piled up until they permanently rose out of the tidal mudflats. But a pile of shells isn't an island until something holds it

together. The creeping, grasping roots of mangrove and giant baobab trees grew through the piles, binding the shells tightly together and stabilizing them into a solid landmass.

Historians still debate exactly when Fadiouth was born—local legends say people have lived there since the 12th century, while historical documents point to the 16th. But one fact is beautifully undisputed: the island's blindingly white cemetery features Christians and Muslims resting peacefully side-by-side, buried together in a "soil" made purely of shells.

Where on Earth?



Find it yourself: 14.2° N, 16.8° W

IF YOU WENT THERE

What Hits You First

There is no dirt here. Every step you take echoes with a hollow *crunch, crunch, crunch*. The streets and buildings are blindingly white in the hot sun. The air fills your lungs with a sharp, briny mix of salty mangrove estuary, drying fish, and roasted baobab seeds.

LOCATION	Petite Côte, Senegal
SIZE	Reached by a 400-meter wooden footbridge
BEST TIME	November to May
ISLAND SOIL	100% empty clam and cockle shells

WEIRD-O-METER



Seriously bizarre

DECEPTION ISLAND

An active, flooded Antarctic volcano where penguins waddle on black ash beaches beside scalding, geothermally heated ocean water.



Thousands of years ago, a massive subglacial volcano in the frigid Southern Ocean blew its top. The eruption emptied the volcano's magma chamber, causing the mountain's center to cave in and form a giant, bowl-shaped crater called a **caldera**. The freezing sea eventually smashed through the caldera's rocky wall—at a terrifyingly narrow gap named "Neptune's Bellows"—and flooded the center to create a hidden, ring-shaped bay called Port Foster.

Because this volcano is still highly active, shallow magma continuously fuels a bizarre geothermal microclimate. Hidden underwater vents superheat the icy Antarctic seawater, causing actual steam to rise off the black ash shorelines. It's a surreal,

freezing-yet-boiling haven for wildlife, where tens of thousands of chinstrap penguins gather to breed along the dark volcanic sand.

But Deception Island doesn't just look dangerous; it is. Predicting its volcanic activity remains a major scientific challenge. In 1967 and 1969, the island suddenly erupted, forcing scientists at the British and Chilean research bases to flee for their lives. Today, the ruined buildings still stand, slowly being buried under layers of volcanic cinder and snow.

Where on Earth?



Find it yourself: 63.0° S, 60.6° W

IF YOU WENT THERE

What Hits You First

Your ship squeezes through Neptune's Bellows into a hidden, ash-blackened bay. The air is freezing, yet steam rises off the dark volcanic sand. You hear the deafening calls of chinstrap penguins and smell a dizzying mix of salty ocean brine, pungent sulfur, and the overpowering ammonia stink of bird guano.

LOCATION	South Shetland Islands, Antarctica
SIZE	15 km (9 miles) in diameter
BEST TIME	November to March (Austral Summer)
WATER TEMP	Up to 70°C (150°F) at the shoreline

WEIRD-O-METER



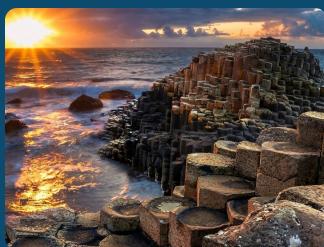
Seriously bizarre

CHAPTER 5

LOOKS DESIGNED. ISN'T.

Perfect hexagons. Circles stamped across a desert. A staircase for giants. These places look like somebody built them — but the only architects were physics, chemistry, and time.

6 PLACES · ALL REAL



Giant's Causeway (Clochán an Aifir)



The Wave



Salar de Uyuni (Salar de Tunupa)

Coming up in this chapter

GIANT'S CAUSEWAY (CLOCHÁN AN AIFIR)

Forty thousand perfectly geometric stepping stones plunge into the freezing Atlantic—forged by math, not mythical giants.



According to local folklore, an Irish giant named Finn McCool built these massive stone steps to cross the sea and fight a rival. It is easy to see why people believed that. The Causeway looks exactly like a colossal, intentionally carved tiled floor. But the real builder was a geological process called **columnar jointing**, and its only tools were heat and math.

About 50 to 60 million years ago, intense volcanic eruptions flooded a deep river valley with a 30-meter-deep pool of molten basaltic lava. Because the pool was so thick, it cooled down incredibly slowly. As rock cools, it shrinks. This thermal

contraction built up massive stress inside the solidifying lava until it finally snapped.

By superheating and crushing basalt cores in a lab, scientists at the University of Liverpool recently figured out exactly when that snap happens: right between 840°C and 890°C (1,544°F to 1,634°F). As the fractures pushed downward, nature chose the most energy-efficient shape to release the pressure. The cracks naturally merged into 120-degree angles, slicing the giant lava lake into a massive, interlocking puzzle of perfectly regular hexagons.

Where on Earth?



Find it yourself: 55.2° N, 6.5° W

IF YOU WENT THERE

What Hits You First

You stand on the edge of the Antrim coast as the freezing, violent Atlantic Ocean roars and smashes against the shoreline. The air smells sharply of marine brine and damp earth. Beneath your boots, the ground feels like a colossal, uneven tiled floor of cold, dark-grey geometric stepping stones marching straight into the churning sea.

LOCATION	County Antrim, Northern Ireland, UK
SIZE	Approximately 40,000 interlocking columns
BEST TIME	Low tide, late spring to early autumn
FRACTURE TEMP	840°C to 890°C

WEIRD-O-METER



Seriously bizarre

THE WAVE

It looks like a giant, neon-striped skate park, but it's actually the fossilized remains of a 190-million-year-old desert.



When you step into The Wave, your brain screams that someone tilted the earth or carved a massive, sweeping skate park out of striped rock. But there was no tectonic lifting or tilting involved. You are actually looking at the frozen ghosts of giant sand dunes from 190 million years ago, during the Jurassic period. Back then, this part of Arizona was a massive desert larger than the modern Sahara.

The mind-bending lines are the result of a process called **aeolian cross-bedding**. Ancient winds blew massive dunes across the desert, and sand slumped down the steep, sliding edges (the slip faces) of those dunes. Over millions of years, these

rhythmic layers of falling sand stacked up, got buried, and slowly turned into solid Navajo Sandstone.

The wild colors come from "diagenetic coloration." Groundwater packed with iron oxide minerals (like hematite and goethite) bled through the porous stone, permanently "rusting" the sand layers into brilliant bands of salmon, yellow, orange, and purple. Finally, seeping water and funneling winds scoured the rock, polishing it into a U-shape. The rock looks perfectly designed, but it's just ancient wind, deep rust, and an awful lot of time.

Where on Earth?



Find it yourself: 37.0° N, 112.0° W

IF YOU WENT THERE

What Hits You First

You hike through a blistering badland under a punishing sun, breathing bone-dry air that smells of baked dust and juniper. Suddenly, you step into a surreal trough of smooth, undulating rock. Towering around you are violently bright bands of salmon, yellow, orange, and purple, swooping together like a frozen ocean wave.

LOCATION	Coyote Buttes North, Arizona, USA
SIZE	Two troughs, up to 36 meters long
BEST TIME	Spring or Fall, right at mid-day
DAILY VISITORS	64 people, chosen via strict lottery

WEIRD-O-METER



Seriously bizarre

SALAR DE UYUNI (SALAR DE TUNUPA)

Invisible underground whirlpools squeeze the crust of the world's largest salt flat into a flawless, repeating honeycomb grid.



For decades, scientists looking at the world's largest salt flat were stumped. Stretching for 3,800 square miles across an ancient Pleistocene lakebed, the blinding white salt crust is divided into a massive, repeating honeycomb grid of raised polygons. People used to guess the crust was just buckling from a lack of space, or cracking like dry mud.

But in 2023, fluid dynamicists finally cracked the case: the real architect is an invisible process called **porous media convection**. Beneath the hard salt crust is a deep layer of extremely salty brine. When the blazing sun evaporates water from the surface, the top

layer becomes hyper-concentrated with heavy salt. That heavy water sinks, while lighter, fresher water rises from below to replace it.

This continuous loop creates thousands of invisible, circular underground whirlpools called convection cells. When these circular whirlpools press up against each other, they get squeezed into perfect hexagons, just like bees packing honeycomb to save space. As the heavy water sinks at the edges of the shapes, it dumps extra salt on the surface, physically building up the raised, repeating ridges across thousands of miles of desert.

Where on Earth?



Find it yourself: 20.1° S, 67.6° W

IF YOU WENT THERE

What Hits You First

You experience profound disorientation. In the dry season, you crunch across a blindingly white, infinite grid of raised salt hexagons. In the rainy season, a thin layer of calm water transforms the ground into a flawless mirror. With the horizon erased, the sky copies itself, making you feel like you are walking across clouds in an endless void.

LOCATION	Daniel Campos Province, Bolivia
SIZE	10,000 square kilometers (3,800 sq miles)
BEST TIME	Dec–Mar for mirrors; Apr– Nov for grids
POLYGON WIDTH	1 to 2 meters

WEIRD-O-METER



Planet's finest weirdness

FAIRY CIRCLES (LINYJI / MINGKIRRI)

To survive extreme desert droughts, these African grasses organize themselves into a massive, 1,500-mile-long polka-dot grid.



For decades, local folklore claimed that these millions of perfectly spaced circles stretching down the coast of southern Africa were the footprints of gods. But scientists realized the truth is a wild example of nature fighting to survive extreme drought. In the scorching Namib Desert, water is so scarce that plants have to act like engineers.

The leading theory is a biological math trick called a "Turing pattern"—the exact same mathematical equations that create the spots on a leopard. To prevent scarce rain from evaporating, grasses organize themselves into rings. The barren red dirt in the center

allows water to sink deep underground. The perimeter grasses then stretch their roots inward to sip from this hidden reservoir, naturally spacing themselves out into a massive, repeating grid.

But the plants might have hungry helpers. Some biologists fiercely argue that sand termites (*Psammotermes allocerus*) actively chew the grass roots to build these empty water-catchers for their own underground nests. Today, scientists think it might be a brilliant team effort, with both the plants and the bugs hacking the desert ecosystem to stay alive.

Where on Earth?



Find it yourself: 24.1° S, 15.7° E

IF YOU WENT THERE

What Hits You First

Walking through the remote Namib Desert, the air is scorchingly hot and smells of dry dust. Looking around, the landscape resembles a giant green-and-red polka-dot dress. Millions of perfectly circular, completely barren patches of red dirt stretch to the horizon, each encircled by a distinct, lush ring of tall pale-green grass.

LOCATION	Namib Desert, Namibia
SIZE	1,500 miles down the African coast
BEST TIME	Shortly after a rare rainfall
NEIGHBORING CIRCLES	6 — forming a perfect natural honeycomb

WEIRD-O-METER



Seriously bizarre

MOERAKI BOULDERS (KAIHINAKI)

Looking exactly like giant, hatched alien eggs scattered on a beach, these massive stone spheres are entirely natural.



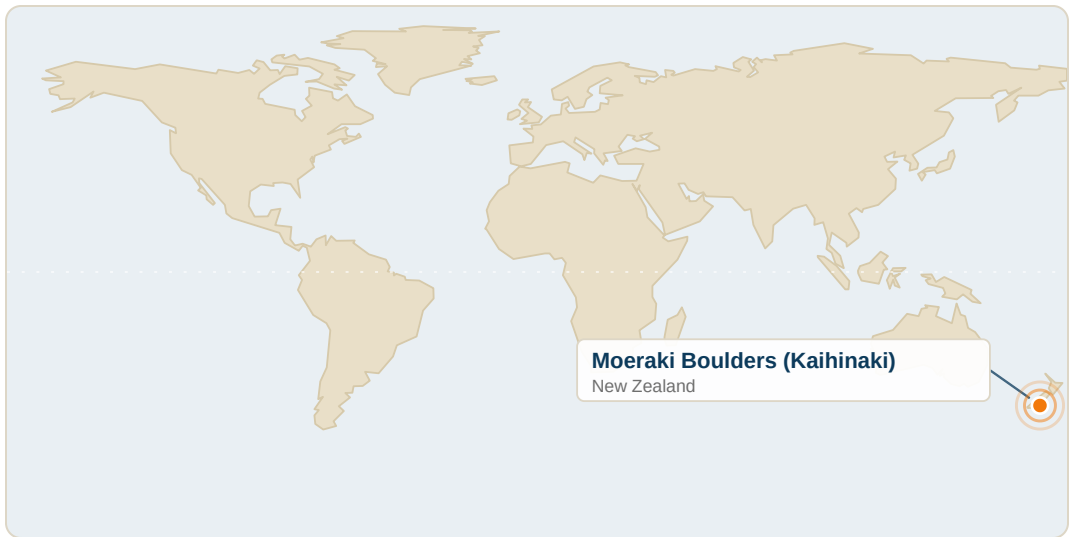
According to local Māori legend, these giant stone spheres are petrified eel baskets and water gourds washed ashore from the wreck of an ancient sailing canoe. It is easy to see why people thought they were manufactured—they look way too perfectly round to be natural. But they aren't carved, and they didn't fall from space. They grew.

Around 60 million years ago, this beach was a muddy ocean floor. Down in the muck, minerals like calcium carbonate began cementing loose sediment together around tiny pieces of shell or bone, creating a rock called a **septarian concretion**. Because the

minerals spread outward in all directions at the exact same rate—a process called **mass diffusion**—the rock grew into a perfect, massive sphere.

It took up to 5.5 million years for the largest boulders to slowly form in the mud. Later, the spheres fractured internally, and spectacular yellow and brown calcite crystals grew in the empty cracks. Finally, the ocean eroded the coastal cliffs, dropping these massive, crystal-filled "eggs" right onto the beach for us to find.

Where on Earth?



Find it yourself: 45.3° S, 170.8° E

IF YOU WENT THERE

What Hits You First

You step onto muddy, wave-battered sand, breathing in the crisp, salty chill of the South Pacific. Scattered everywhere are impossibly massive, perfectly spherical grey rocks. Some are cracked open, revealing glittering yellow and brown crystals hidden inside, looking exactly like a clutch of giant, hatched alien eggs left behind on the shoreline.

LOCATION	Koekohe Beach, New Zealand
SIZE	1.5 to 2.2 meters across, weighing tons
BEST TIME	Low tide
GROWTH TIME	4 to 5.5 million years per boulder

WEIRD-O-METER



Seriously bizarre

CHOCOLATE HILLS (MGA BUNGTOD SA TSOKOLATE)

Over 1,200 perfectly smooth, identical hills that look like giant chocolate truffles, carved by millions of years of rain.



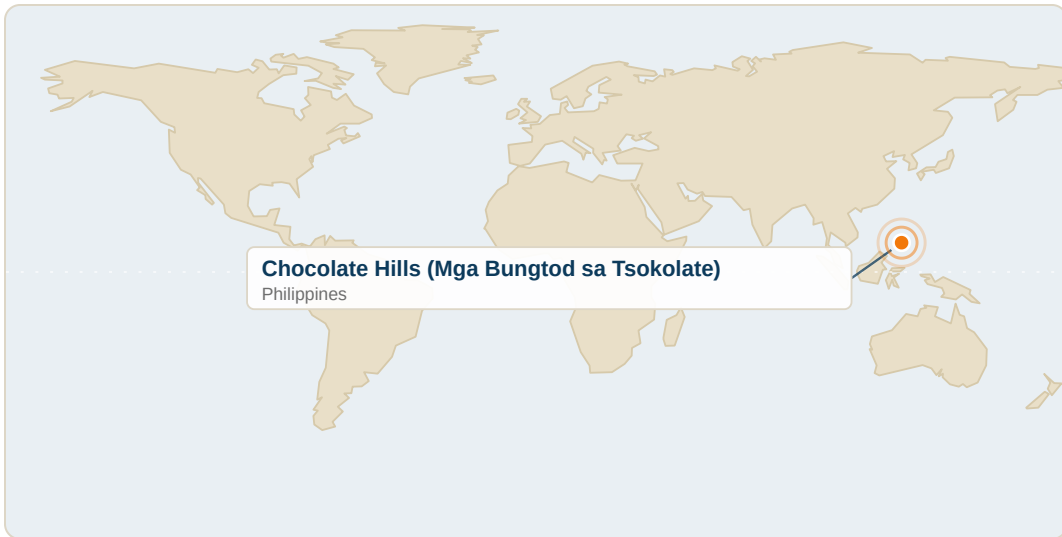
If you look out over the province of Bohol during the dry season, you might think a bakery dropped over a thousand gigantic chocolate truffles across the landscape. Local legends claim these perfectly smooth, identical cones are the dried tears of a heartbroken giant, or boulders left over from a massive fight. But the real sculptor wasn't a giant—it was time, tectonic plate collisions, and slightly acidic rain.

Between two and five million years ago, this entire region sat at the bottom of a shallow ocean. It was a massive, thick platform of coral reefs, red algae, and marine shells. Over time, slow-motion tectonic plate collisions shoved this huge coral bed

straight up out of the sea and into the open air.

Once exposed, the rock underwent a process called *cockpit karst geomorphology*. Limestone dissolves easily in water. Over millions of years, tropical rainfall and groundwater seeped into the rock's natural fracture networks, chemically eating away the weaker limestone and carving deep valleys. Only the absolute strongest, most densely packed cores of the ancient reef survived the acid bath, leaving behind a staggering landscape of residual limestone cones standing up to 120 meters tall.

Where on Earth?



Find it yourself: 9.9° N, 124.2° E

IF YOU WENT THERE

What Hits You First

Standing on a viewing deck in Bohol, warm, humid tropical breezes hit your face as you take in a sweeping panoramic view that defies logic. Stretching to the horizon are over a thousand perfectly smooth, conical hills. During the dry season, the scorched grass transforms the rolling terrain into endless rows of giant chocolate truffles.

LOCATION	Bohol Province, Visayas, Philippines
SIZE	Over 1,260 hills across 50 square kilometers
BEST TIME	December to May, when grass turns chocolate brown
TALLEST CONE	120 meters (most are 30 to 50 meters)

WEIRD-O-METER



Seriously bizarre

CHAPTER 6

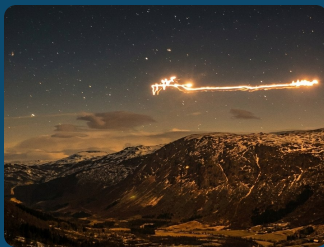
STILL UNEXPLAINED

Science has solved a lot — but not everything. These places are real, measured, and photographed, and the smartest people on Earth are still arguing about why they happen.

6 PLACES · ALL REAL



The Milky Seas



The Hessdalen Lights



Morning Glory Clouds

Coming up in this chapter

THE MILKY SEAS

Trillions of glowing bacteria light up a patch of ocean the size of Connecticut, and nobody knows how.



When sailors reported sailing through a glowing, milky-white ocean that looked like a flat field of snow, people thought they were crazy. But satellites passing over the Indian Ocean proved them right. Unlike standard ocean bioluminescence caused by algae called dinoflagellates—which flash only when disturbed by a boat or a wave—the Milky Seas emit a steady, continuous glow. The culprits are luminous bacteria called *Vibrio harveyi*.

These bacteria use a chemical communication system called "quorum sensing." Once they gather in mind-boggling numbers—an estimated 100 million cells per milliliter of water—they collectively trigger their glow. Biologists hypothesize they "scream" with

light to attract fish, hoping to get swallowed so they can live comfortably inside a nutrient-rich fish gut. When they gather, they can light up 100,000 square kilometers of ocean, a patch roughly the size of Connecticut.

But here is the mystery: How do they pull this off? To reach such impossible density in the open ocean, the bacteria must be colonizing a massive food source, like a colossal algal bloom or a blizzard of decaying "marine snow." Even weirder, scientists have no idea how these giant glowing patches manage to stay completely stable for weeks at a time without being ripped apart and dispersed by wild sea currents.

Where on Earth?



Find it yourself: 15.0° N, 58.0° E

IF YOU WENT THERE

What Hits You First

You stand on a ship's deck on a moonless night. The ocean stretches from horizon to horizon, glowing with a steady, opaque bluish-white light. It doesn't flash or sparkle—it looks exactly like a continuous field of snow. The glow is so disorienting it feels like you are gliding through the sky instead of floating on water.

LOCATION	Somali Basin, Indian Ocean
SIZE	Up to 100,000 km ²
BEST TIME	January to March
HISTORIC SIGHTINGS	235 times between 1915 and 1993

WEIRD-O-METER



Seriously bizarre

THE HESSDALEN LIGHTS

Glowing orbs of plasma silently hover and dart through this freezing valley at 30,000 kilometers per hour.



If you spot a glowing orb zipping through the night sky, you might assume it's a UFO. UFO enthusiasts certainly did, flocking to this freezing Norwegian valley for decades. But scientists from Project Hessdalen didn't look for little green aliens. Instead, they set up an Automatic Measurement Station with radar and optical cameras to track the truth. They proved these silent, hovering lights are 100 percent real, measurable physical phenomena: glowing pockets of ionized gas, or atmospheric plasma. They even clocked one orb darting across the sky at a jaw-dropping 30,000 kilometers per hour, blasting out 19 kilowatts of radiant power.

So, what is powering these plasma speedsters? That is the fierce, ongoing scientific debate. Some geologists suspect the entire valley acts as a giant "macro-scale geological battery." One side of the valley is packed with copper-rich rocks, the other side has zinc and iron, and a river carrying sulfuric acid from old mines flows right between them. This massive natural battery could be sparking localized plasma discharges in the air.

Other researchers think the sparks come from tectonic stress squeezing underground quartz to generate *piezoelectricity*. Still others suspect decaying radon gas is ionizing atmospheric dust into glowing "Coulomb crystals." We don't have the final answer yet, but that's what makes this an exciting, unmapped frontier of geophysics and electromagnetism. The Earth is putting on a high-speed light show, and science is still chasing it down.

Where on Earth?



Find it yourself: 62.8° N, 11.2° E

IF YOU WENT THERE

What Hits You First

You stand in the freezing, snow-covered valley on a dark winter night. High above, a glowing orb of yellow-white light silently hovers. It stays completely frozen in place for an hour, illuminating the snowy valley floor, before suddenly darting across the sky without making a single sound.

LOCATION	Hessdalen Valley, Trøndelag, Norway
SIZE	15 kilometers (9.3 miles) long
BEST TIME	Winter nights for maximum darkness and clear air
TOP SPEED	30,000 km/h — tracked by radar

WEIRD-O-METER



Seriously bizarre

MORNING GLORY CLOUDS

A flawless, 1,000-kilometer-long rolling tube of cloud that sweeps across the Australian sky like a giant rolling pin.



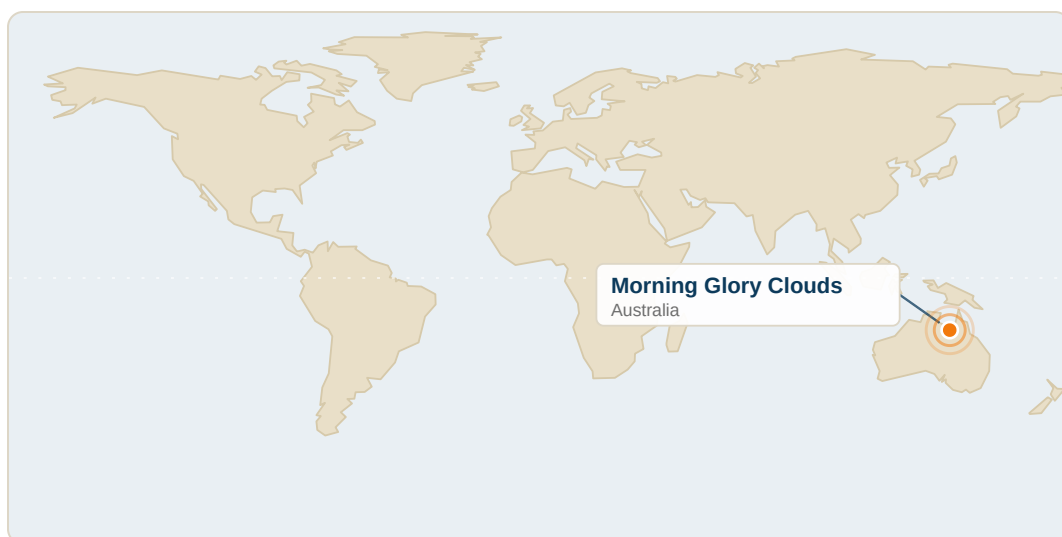
During the dry season, competing sea breezes from the Coral Sea and the Gulf of Carpentaria collide over the Cape York Peninsula. As the night air cools, cold air gets trapped beneath a layer of warm air—a process meteorologists call an inversion layer. The colliding sea breezes are forced to plunge underneath this lid of trapped air, creating a massive, rolling cylinder of wind known as an undular bore or a low-level atmospheric solitary wave.

As the air rolls upward at the front of the wave, moisture condenses into a visible cloud. As it sinks at the back, the cloud evaporates. This constant cycle of condensing and vanishing keeps the cloud in a crisp, perfectly tubular shape as it barrels forward at

10 to 20 meters per second.

While the fluid dynamics of this massive wave are mathematically understood, meteorologists are still actively debating *why* it happens here so predictably. The incredibly specific topographical alignment needed to trigger these precise nonlinear wave interactions forms almost exclusively in the Gulf of Carpentaria, remaining a rare and unpredictable mystery everywhere else on Earth.

Where on Earth?



Find it yourself: 17.7° S, 139.5° E

IF YOU WENT THERE

What Hits You First

Standing on the flat plains near Burketown at dawn, you look up to see a perfect, cylindrical cloud rolling from horizon to horizon. As this gigantic rolling pin passes overhead, a violent wind squall blasts you for five to ten minutes, and a sudden jump in atmospheric pressure literally pops your ears.

LOCATION	Gulf of Carpentaria, Queensland, Australia
SIZE	Up to 1,000 km long, 2 km high
BEST TIME	Late September to early November, at dawn
TRAVEL SPEED	10 to 20 meters per second

WEIRD-O-METER



Genuinely weird

YAMAL GAS EMISSION CRATERS

Immense, perfectly round craters are violently exploding out of the Siberian permafrost as underground methane pressure builds.



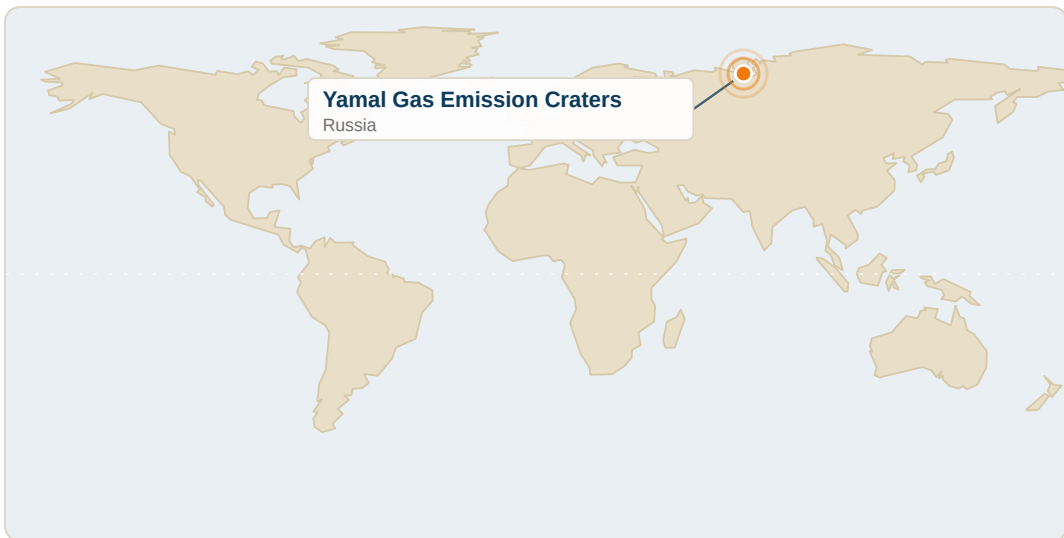
Discovered by helicopter pilots in 2014, these terrifying, perfectly cylindrical black holes are a brand-new geological phenomenon. The Yamal Peninsula—whose name translates to "End of the Land" in the local Nenets language—is covered in continuous permafrost up to 400 meters thick. Beneath that ice lies a massive reserve of trapped methane gas, generated by the biochemical decay of ancient vegetation.

As the Arctic climate warms, the permafrost begins to thaw. The trapped methane builds immense pressure, forcing the frozen earth to bulge upward into a giant ice hill called a "pingo." When the ground can't stretch any further, it violently explodes. A

single blast can eject up to 220,000 cubic meters of frozen sediment, leaving behind a yawning crater.

Chemical analysis definitively rules out meteorites or weapons testing, but cryosphere scientists are still fiercely debating what triggers the exact blast. Is the pressure building from the bottom-up, fueled by deep thermogenic gas migrating through fault lines? Or is it a top-down reaction, caused by the rapid thawing of gas hydrates and microbial activity right at the surface? Either way, the frozen Earth is literally blowing its top.

Where on Earth?



Find it yourself: 67.8° N, 70.5° E

IF YOU WENT THERE

What Hits You First

Flying over the flat, treeless tundra, you see a terrifyingly perfect black hole plunged directly into the earth. The edges are thrown outward, with chunks of frozen dirt scattered hundreds of feet away, like a bomb detonated underground. In the freezing air, you smell the sharp stench of rotten eggs and methane.

LOCATION	Yamal Peninsula, Siberia, Russia
SIZE	Up to 25m wide and 50m deep
BEST TIME	Summer, during the arctic thaw
ISOTOPE SIGNATURE	-76‰ — proving the methane is from biological decay

WEIRD-O-METER



Planet's finest weirdness

MOBILE CAVE

Sealed off from the sun for 5.5 million years, this toxic cave is crawling with blind, pale insects.



Discovered by accident during construction in 1986, Movile Cave is an underground world that has been completely sealed off from sunlight for 5.5 million years. The air inside is deadly to humans, packed with carbon dioxide, methane, and toxic hydrogen sulfide gas. Because there is absolutely no sun, there is no photosynthesis. Instead, the cave's food web relies on a process called **chemosynthesis**. Specialized bacteria literally eat the toxic, rotting-egg-scented gases to create energy, forming a thick, slimy microbial mat on the walls.

This toxic slime is an all-you-can-eat buffet for 48 distinct species of pale, completely blind cave animals—including spiders, leeches, and water scorpions—33 of which exist nowhere else on Earth. But while scientists understand *how* they survive, they are still fiercely debating *when* they arrived.

Did these creepy-crawlies get locked inside 5.5 million years ago when the Mediterranean Sea dried out during the Miocene epoch? Or did some of them squeeze in much later—say, 2 million years ago—through microscopic, undiscovered cracks in the limestone before the cave was fully sealed off? Evolutionary biologists are still studying the DNA of these bizarre critters to solve the mystery.

Where on Earth?



Find it yourself: 43.8° N, 28.6° E

IF YOU WENT THERE

What Hits You First

You descend an artificially sealed shaft into a dark limestone tunnel. The heat hits you instantly—a muggy 70°F with 100% humidity. You gag at the overwhelming stench of rotting eggs from the hydrogen sulfide gas. Peering into dark hydrothermal pools, you spot pale, eyeless spiders and leeches crawling across slimy microbial mats.

LOCATION	Near Mangalia, Constanța County, Romania
SIZE	200-meter dry gallery, 40-meter flooded gallery
BEST TIME	Unvisitable—only permitted scientists can enter
YEARS ISOLATED	5,500,000

WEIRD-O-METER



Planet's finest weirdness

MIMA MOUNDS

Thousands of grass-covered domes make this prairie look like giant bubble wrap, built by earthquakes, glaciers, or gophers.



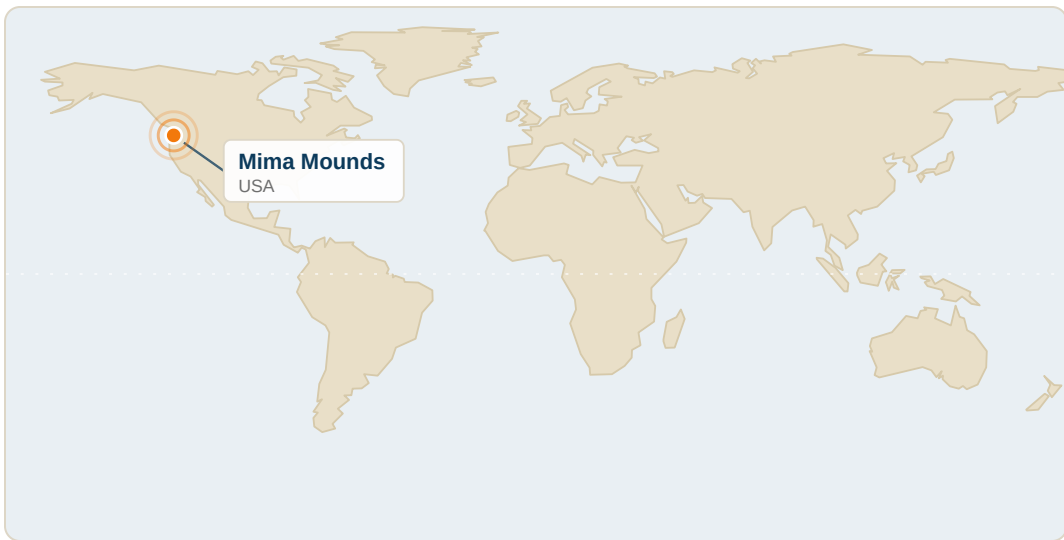
When explorer Charles Wilkes stumbled onto this Pacific Northwest prairie in 1841, he assumed the thousands of perfectly spaced earthen domes were Native American burial mounds. He excavated several, but found absolutely no human remains or artifacts. The landscape wasn't an ancient graveyard; it was an entirely natural geological puzzle sitting on an outwash plain carved by the ancient Vashon Glacier roughly 15,000 years ago.

Each mound is a massive pile of dark, gravel-free topsoil resting on a bed of heavy glacial cobble. Ranging from one to seven feet tall and up to 40 feet across, they are so closely packed that the landscape looks like a sea of giant, grassy bubble wrap.

Because they are strictly natural, geologists have spent over a century trying to figure out what built them.

Today, scientists debate three main hypotheses. The **Seismic Theory** suggests that massive earthquakes shook the unstable, waterlogged glacial soil, vibrating the dirt into neat clumps. The **Glacial Melt Theory** argues that retreating ice or wind deposited the sediment into organized piles. Finally, there is the **Pocket Gopher Theory**: the idea that thousands of years of tiny rodents constantly pushed dirt upward to build dry homes above the flooded rocks, eventually engineering a sprawling labyrinth of domes.

Where on Earth?



Find it yourself: 46.9° N, 123.0° W

IF YOU WENT THERE

What Hits You First

Walking out onto the preserve, you are confronted with a rolling labyrinth that looks like a giant egg carton. Hundreds of perfectly spaced, dome-shaped earthen mounds stretch to the horizon, covered in moss, wildflowers, and grass. You breathe in the damp smell of Pacific Northwest prairie, mesmerized by the endless uniform repetition.

LOCATION	Thurston County, Washington
SIZE	756 acres
BEST TIME	Year-round
MOUND DENSITY	8 to 10 mounds per acre

WEIRD-O-METER



Genuinely weird