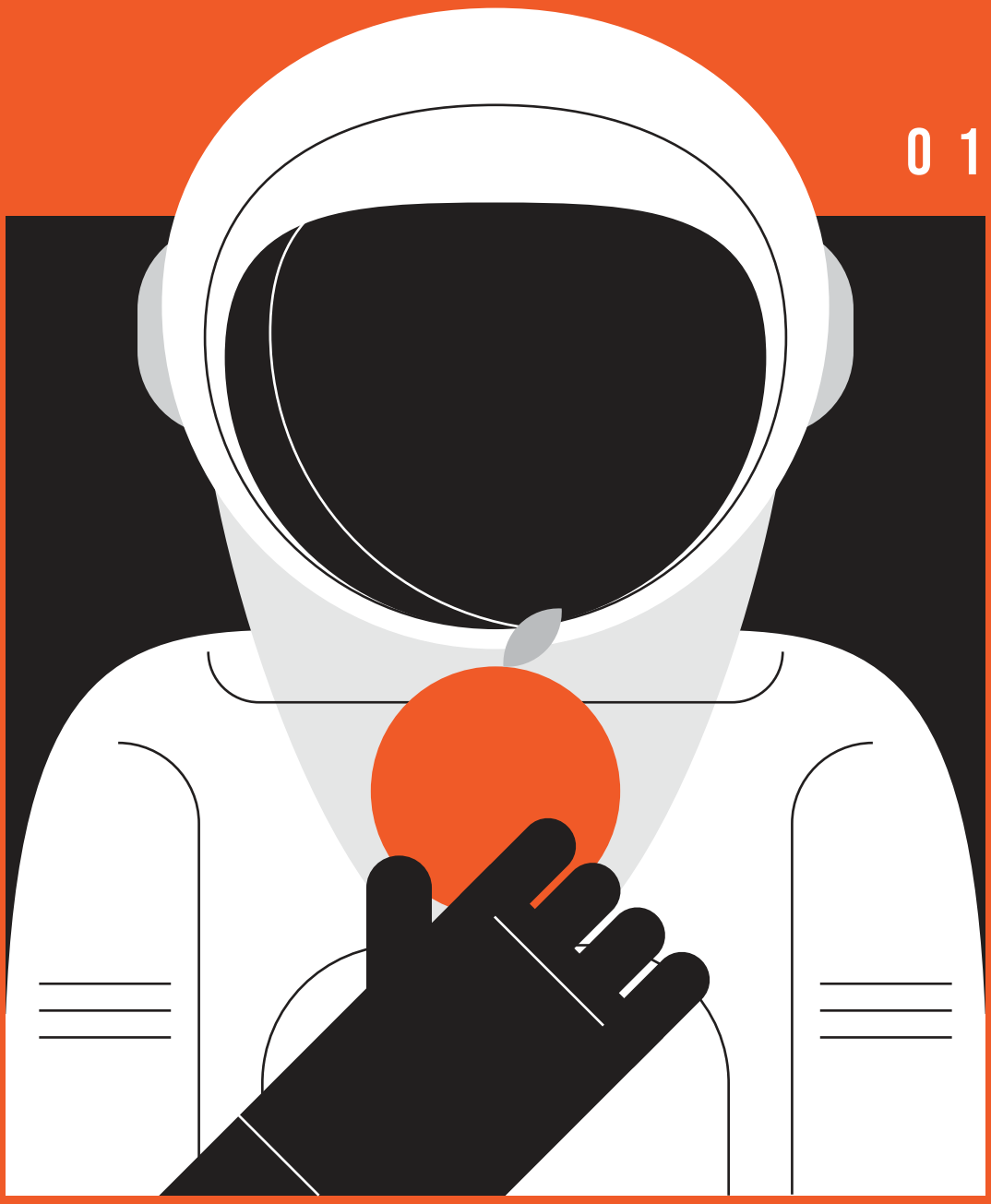
GRAPHONAUT

01



THE INFINITE UNIVERSE OF VISUAL STORIES

Bold infographics.
Visual insights.
Thoughtful content.



thegraphonaut.com

01



Launchpad

"Simplicity is not an end in art, but we usually arrive at simplicity as we approach the true sense of things."

— Constantin Brâncuși

At Graphonaut, we share that pursuit of clarity. Welcome to your guide through the infinite universe of visual stories — a publication created by a diverse team of experienced media and creative professionals with more than a century of combined expertise and multiple international awards for their work.

In today's world of overwhelming information and shrinking attention spans, Graphonaut is designed to cut through the noise. Our stories are concise, intuitive, and inspirational — a magazine you can read in one sitting, yet leave with insights and perspectives that linger far longer.

In the first issue we explore: The AI Water Problem, revealing how artificial intelligence consumes vast amounts of water; Mars Space Tourism, a future travelogue through the Red Planet; and How Women Shaped the World of Technology, a timeline celebrating brilliant yet often overlooked women inventors.

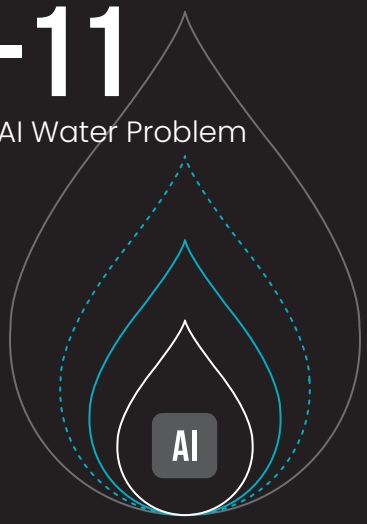
Why Graphonaut? Because every chart is a doorway, and every dataset hides a story waiting to be discovered. Let the journey begin!

Boris Benko, Founder

Navigation

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Launchpad
Navigation

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The AI Water Problem

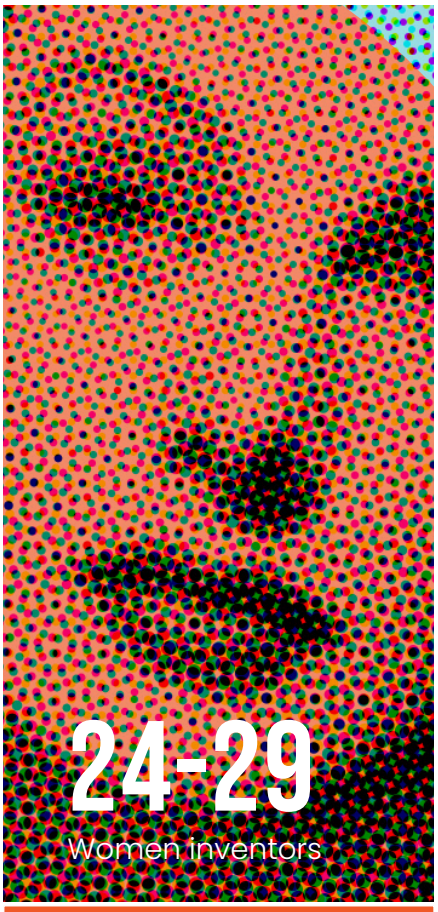


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Timeline

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Women inventors

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Graphoverse

INFOGRAPHIC INSIGHTS



From Near Extinction to Hope

20x

Over the last century, conservation efforts drove an approximately 1,900% increase in the Indian rhino population. Their numbers went from fewer than 200 to over 4,000.

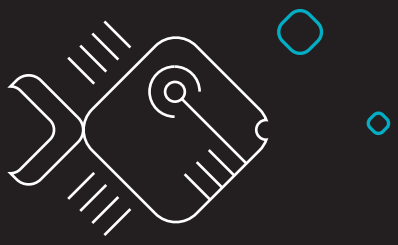
<200

4,000+

SOURCE: WWF India, International Rhino Foundation / PHOTO: Boris Benko

The AI Water Problem

Written by Jacob Roundy



Artificial intelligence is rapidly transforming our world while quietly consuming vast amounts of the planet's precious water resources.

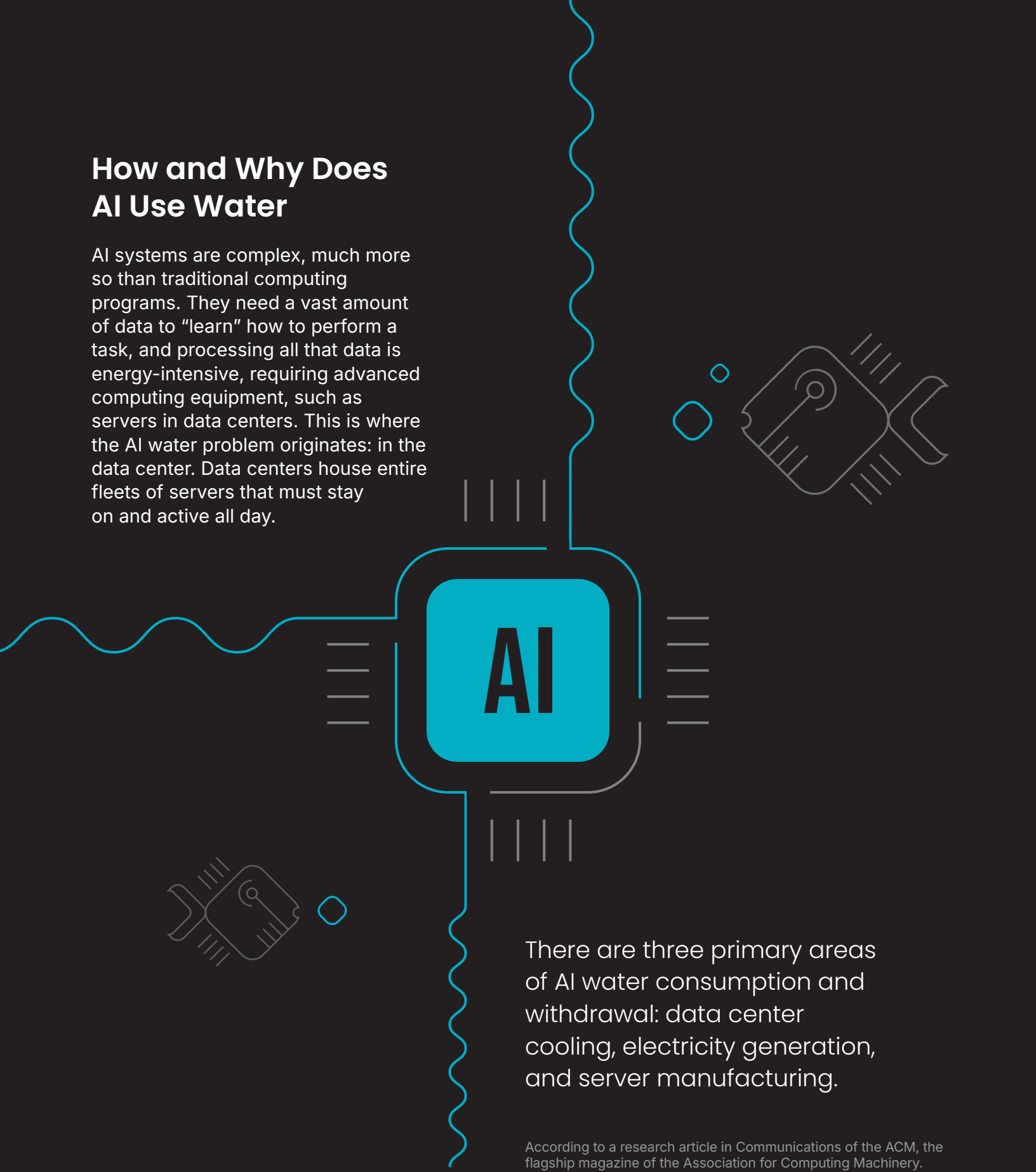
Thanks to recent advancements, artificial intelligence (AI) has made its way into the mainstream. The technology has seen a rapid rise, spreading into every industry and even integrating into the devices we use every day.

However, AI has an unspoken environmental cost. The technology is energy-intensive, requiring a vast amount of electricity to power, but that's not all—AI is also draining water resources around the world.

Let's explore the issue not enough people are talking about: the AI water problem.

How and Why Does AI Use Water

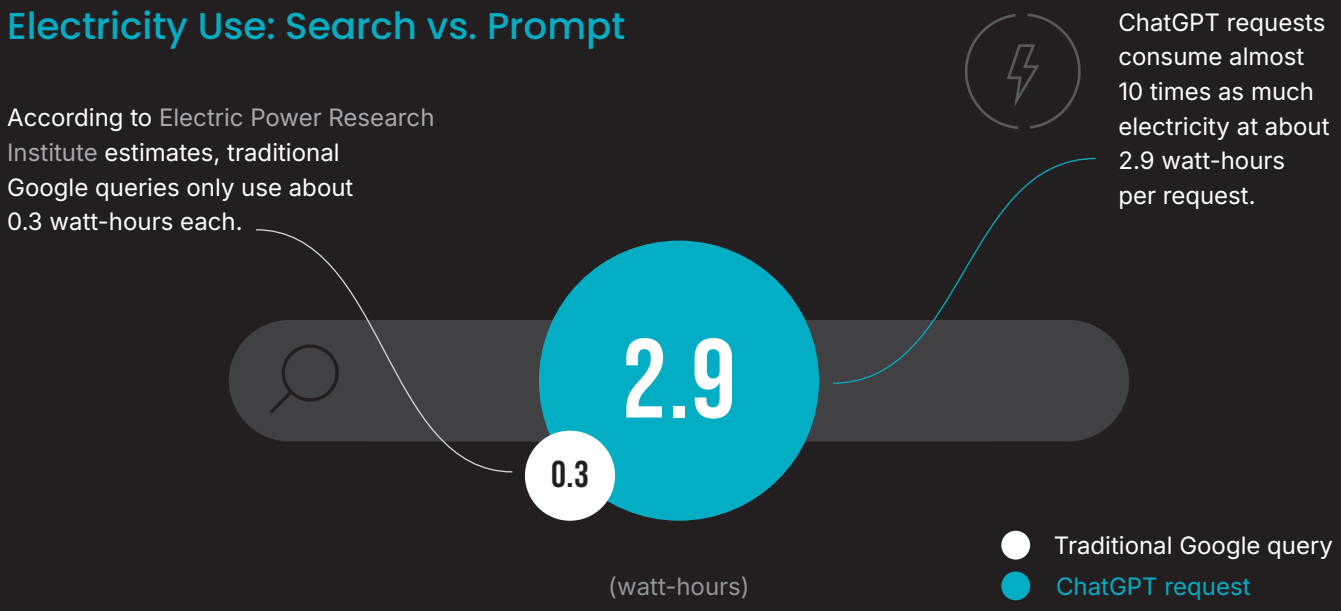
AI systems are complex, much more so than traditional computing programs. They need a vast amount of data to “learn” how to perform a task, and processing all that data is energy-intensive, requiring advanced computing equipment, such as servers in data centers. This is where the AI water problem originates: in the data center. Data centers house entire fleets of servers that must stay on and active all day.



There are three primary areas of AI water consumption and withdrawal: data center cooling, electricity generation, and server manufacturing.

According to a research article in Communications of the ACM, the flagship magazine of the Association for Computing Machinery.

Electricity Use: Search vs. Prompt



Those servers need electricity to function, and nearly all server energy is converted into heat. When they're processing complex and data-intensive workflows, such as those demanded by AI models, they generate even more heat. If that heat is not managed properly, it can damage the sensitive components in servers and cause complete equipment failure.

To prevent this, data centers use cooling systems to maintain temperatures. The majority of cooling systems in use today are liquid-based and water-intensive. Some, for example, use water to absorb server heat, while others evaporate water to cool facility air. Some cooling systems don't use water, but they consume more electricity as a trade-off. That brings us to the second area of AI water use: electricity generation.

According to an article in npj Clean Water, water is part of the electricity generation process. During this process, water can evaporate or be discharged, resulting in water loss. This is a particular concern for power plants that burn fossil fuels, such as gas or coal, though even solar and wind energy can consume water.

AI workloads also tend to use more energy—and, therefore, more water—than traditional computing programs. Generative AI models (those that can generate images, audio, and video) tend to be even more energy-hungry because of the sheer complexity of the requests.

And finally, both AI chips and servers require water to manufacture. Semiconductors, which are key to manufacturing both types of equipment, use a process called wafer fabrication that needs ultrapure water. Ultrapure water is thousands of times cleaner than drinking water, and according to the World Economic Forum, it takes about 5,678 liters (1,500 gallons) of municipal water to make 3,785 liters (1,000 gallons) of ultrapure water.

AI WATER CONSUMPTION

A Look at the Numbers

All this AI water usage adds up. When you look at the numbers, it starts to get very concerning very fast. Here are some AI water usage statistics that underline the issue at hand:

38[6] L

The average AI chip manufacturing facility can use about 38 million liters (10 million gallons) of ultrapure water every day—that's equal to the amount of water used daily by 33,000 U.S. households.

5.4[6] L

Training a generative AI model could consume upward of 5.4 million liters (~1.4 million gallons) of water. That's about one 0.5-liter (16-ounce) water bottle for every 10 to 50 medium-length responses generated.



11-19[6] L

A typical data center can use 11 to 19 million liters (~2.9 to 5 million gallons) of water per day. That's the equivalent of a town of 30,000 to 50,000 people, according to the BBC.

1.3[12] L

According to an International Energy Agency forecast, worldwide annual AI-related water consumption is expected to rise to 1.3 trillion liters (~340 billion gallons) by 2030. That's about the same amount of water in 480,000 Olympic-sized swimming pools.

2.7[12] L

By 2028, AI in the U.S. alone could require as much as 2.7 trillion liters (~720 billion gallons) of water annually just to cool servers, according to the Food & Water Watch. That's the equivalent of water needed to meet the needs of 18.5 million households.

CUTTING AI'S WATER USE

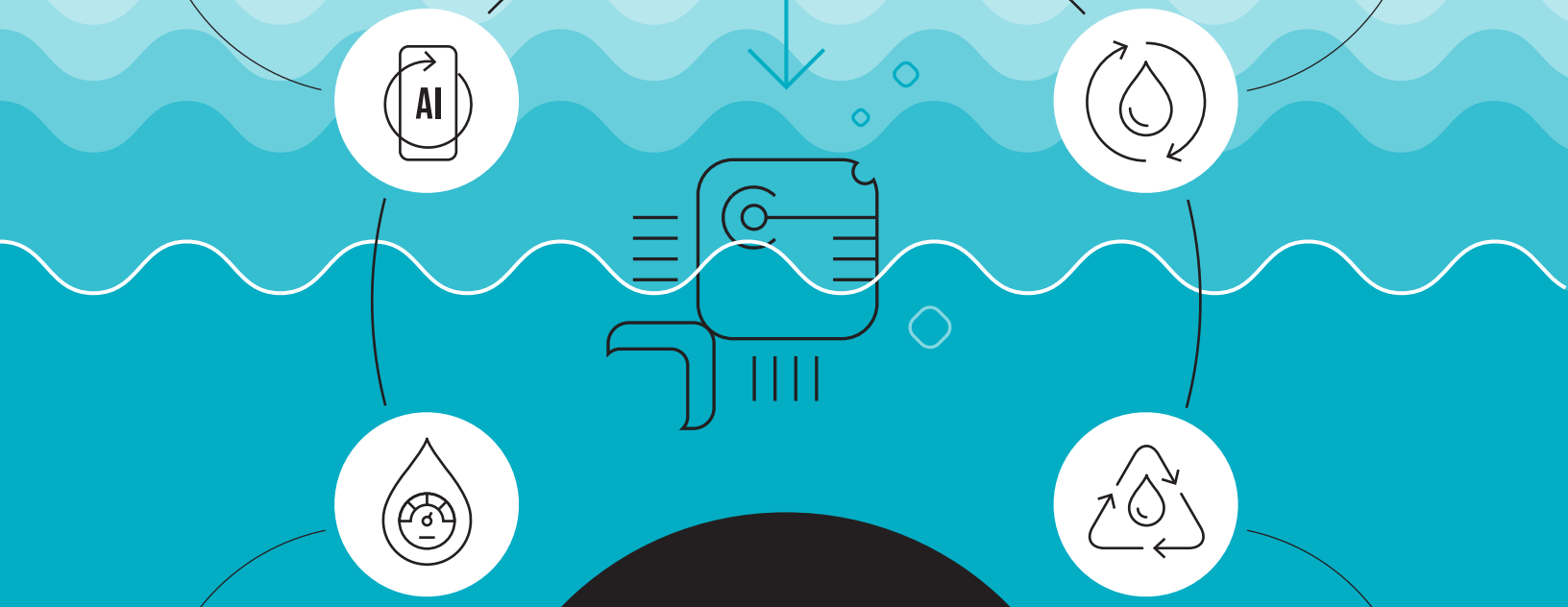
Management Strategies

Raise awareness and make conscious choices

- Limit or avoid using AI in your daily life, especially generative AI.
- Talk about and share data related to the AI water problem.

Invest in sustainable water management technologies

- Use sustainable sources of water, such as rainwater or gray water.
- Design closed-loop liquid cooling systems that recirculate water.



THE FUTURE OF AI SUSTAINABILITY

If AI water use is not restrained, it may lead to an increase in droughts, a reduction in water resources, a steep decline in biodiversity loss, and an increase in wildfire risk.

Conduct water assessments

- Track and report AI water metrics.
- Conduct a water assessment to measure AI use of water.

Reuse and replenish water

- Recycle water for use in the local community.
- Give water back by investing in water replenishment programs.

HOW MUCH WATER DOES A SINGLE AI USER CONSUME?

To avert the worst environmental impacts of AI water usage, we all need to do our part to raise awareness of the AI water problem. If sustainable solutions aren't implemented soon, it could risk everything from human and animal health to the entire ecosystem's stability.



Say you went back and forth with a large language model, like ChatGPT, 10 to 50 times in one day. That would consume the equivalent of a 0.5-liter (16-ounce) water bottle.

0.5 L

If you did that every day for 30 days, that'd be 15 liters (~4 gallons) of water per month.

15 L

For one year? That'd be about 180 liters (~47.5 gallons) of water annually.

180 L

If we multiply this by the average number of ChatGPT's daily active users (~100 million), that's 100 million water bottles or 50 million liters (~13.2 million gallons) of water per day.

100 M

That's 1.5 billion liters (~400 gallons) per month and 18 billion liters (~4.75 billion gallons) per year. That's the equivalent of 7,200 Olympic-size swimming pools per year.

7,200

A Guide Through the Red Planet of the Future

Mars
Space Tourism

Written by Goran Koprenica

Radiation. Extreme temperatures. Only 38% of Earth's gravity. Desolation. Water scarcity. No magnetosphere. Mars is anything but hospitable.

Phobos glides across the sky like a stone skipping across still water...only in slow-motion. It orbits so low, it rises and sets twice a day, every day, lapping another small dot: the second and more distant Martian moon, Deimos, often mistaken for the brightest “star” in the sky.

In the distance, a tiny blue dot flickers against the black background of space. That’s us. Earth. Eight billion people on a speck located some 225 million kilometers away. Not too long ago, we managed to make a second giant leap for mankind: planet colonization.

And you’re on Mars. A tourist on vacation.

Welcome to the end of the 22nd century, envisioned through a projected timeline of Mars exploration and settlement. A time when interplanetary travel is a reality, and Mars, once a cold, harsh desert, now offers adventures that not even the wildest brochures from the Ibiza era could imagine.



How Did We Get Here?

Traveling from Earth to Mars depends on "launch windows" that open every 26 months. The 9-month journey to Mars is long and challenging. During the whole journey, communication with Earth is delayed, and at one point, Mars-to-Earth communication is totally impossible. A round trip would take approximately 2.5 years. That's about 950 times the distance of a round trip to the Moon.

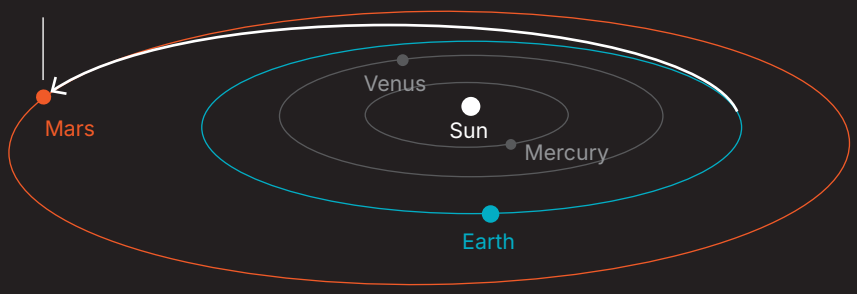
850-Day Earth-Mars-Earth Trajectory for 2039 Mission Opportunity

The Long Arc

279 days, 609 million kilometers, and no turning back.

DAY 279

Crew arrives at Mars

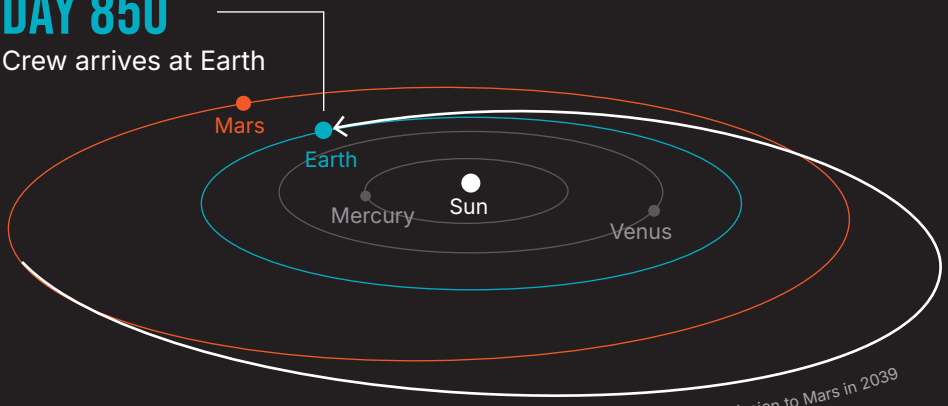


Orbit by Orbit

The route home is long, curved, and beautiful — written in Kepler's laws.

DAY 850

Crew arrives at Earth



SOURCE: NASA / Example roundtrip mission to Mars in 2039



Total distance travelled

1,772

million kilometers

Roundtrip communication delay

34.5

minutes

Mars stay duration

51.4

days

MARS EXPLORATION TIMELINE

2020

2030

2040

2050

2060

2070

2080



2035–2045

First Crewed Missions & Outposts

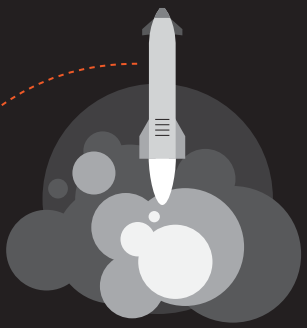
SpaceX initially aimed to land humans by 2028, though many experts expect 2031 to be more realistic. NASA's own planning suggests human missions may arrive around 2037.



2050s–2080s

Self-Supporting Colonies & Births on Mars

Through the 2050s, habitats expand: agriculture, manufacturing, and solar and nuclear energy systems come online. By the early 2080s, the first generation of Martians begin arriving: people born on Mars.



2026–2035

Cargo & Robotic Missions

SpaceX targets its first uncrewed Starship missions to Mars during the 2026 and 2028 launch windows, carrying robots and supplies for site preparation. NASA similarly budgets for precursor missions to test key landing and life-support systems prior to sending crewed missions.



2040s

Establishing Permanent Habitation

In the mid-2040s, explorers begin building small but permanent outposts, testing life-support, radiation shielding (e.g., buried or 3D-printed domes), and in-situ resource utilization (ISRU) or water and oxygen systems.



2080s AND BEYOND

A Thriving Martian Society

By mid-century and beyond, Mars supports a diverse economy, including tourism, mining, research, and self-sustaining communities with regular travel between Earth and Mars. Now, we have people born to those born on Mars.

Mars, Finally

We landed in Vallis Port, one of the newer surface hubs built atop an old mining zone near the Valles Marineris edge. The terminal looked like a sci-fi rendering brought to life.

By Xenos Aster, a Travel Blogger

I stepped out of the shuttle with a breath I couldn't actually take. Not without my suit's filtration system keeping the carbon dioxide out and the warmth in. Still, the feeling was real—the sudden quiet, the gravity shift, the way the light hit the regolith like powdered rust. I was on Mars.

The trip from Lunar Station Strelka-3 took four months. A smooth, luxury cruise through the void. Heated cabins, Earth cuisine (mostly synthetic, but nostalgic), and a transparent observation dome for daily viewings of Earth shrinking behind us. Some guests called it spiritual. I found it exhilarating.

I grew up seeing Mars through history documentaries and dusty mission logs. The first cargo ships, the orbital assembly stations, the robots building habitats brick by brick using the soil beneath their treads. What began as a scientific foothold became a colony. Then, a network. Then, improbably, a society.





Gravity

0.38 G

Average temperature

-63°C

(-81.4°F)

Year length

687

days

Mars didn't become tourist-friendly overnight. The drive wasn't only exploration—it was survival.

I remember reading when the first Martian child was born, not in a dome but in a marsothermal-hardened habitat beneath the Utopia Planitia plain. Her name was Lily. She's a teacher. Her students have never been to Earth—some don't even want to go.

We landed in Vallis Port, one of the newer surface hubs built atop an old mining zone near the Valles Marineris edge. The terminal looked like a sci-fi rendering brought to life. Fusion-powered trams, modular towers, algae-paneled facades soaking sunlight. My guide, Sage-84 AI, welcomed me with an old joke about losing weight, then uploaded a schedule of a few newer optional excursions: Olympus Mons assisted base jumping, sand buggy rides, a tour of the botanical cores, and a visit to the old mines.

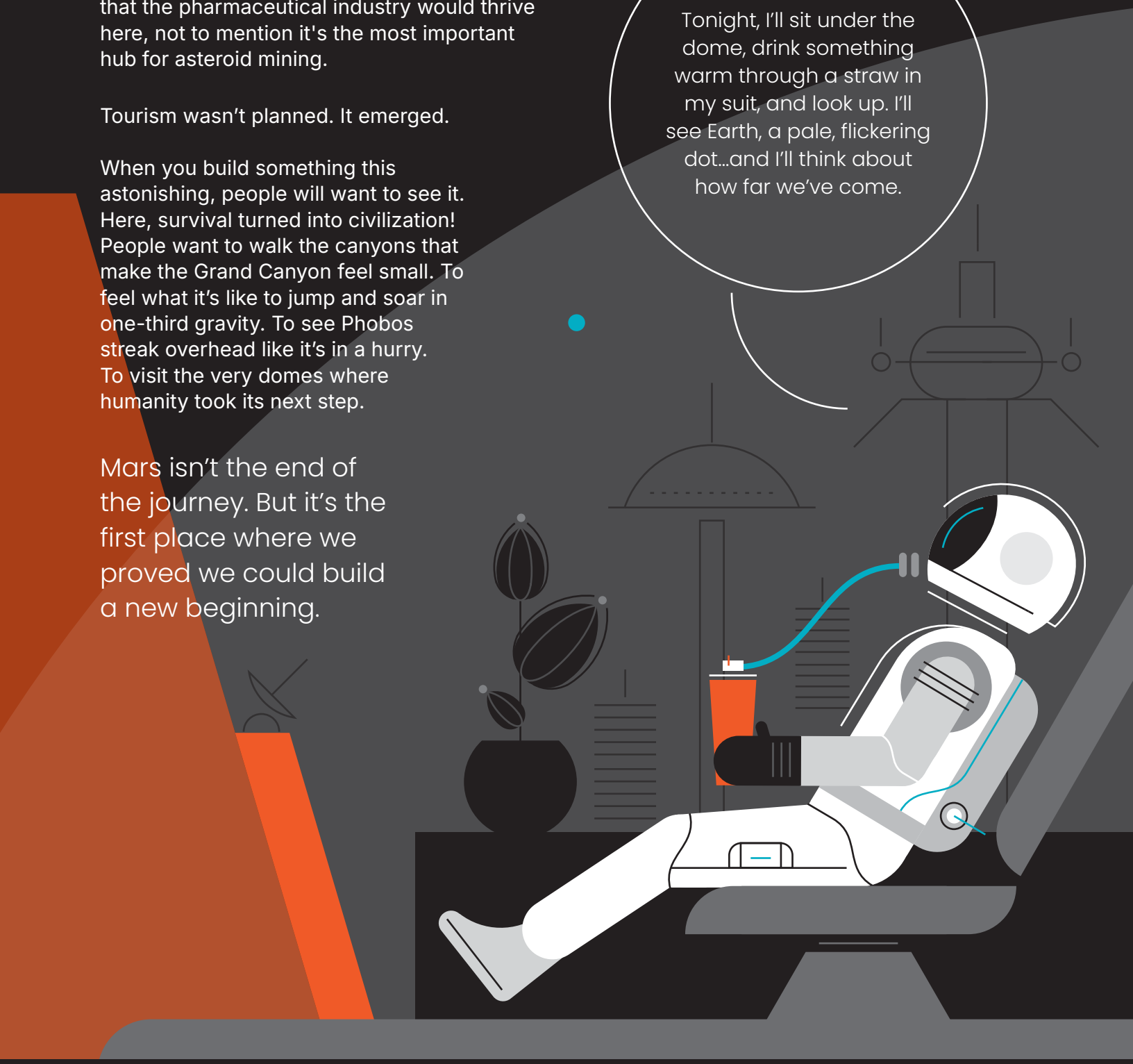
What interests me the most aren't regular tourist attractions. It's the stories about them. Mars didn't become tourist-friendly overnight. The drive wasn't only exploration—it was survival. Either colonization race or The Final War. Luckily, humanity chose well.

Now, uranium powers the reactors here, and Martian regolith contains rare minerals, which are invaluable for further development. Being totally sterile from the start, it was only logical that the pharmaceutical industry would thrive here, not to mention it's the most important hub for asteroid mining.

Tourism wasn't planned. It emerged.

When you build something this astonishing, people will want to see it. Here, survival turned into civilization! People want to walk the canyons that make the Grand Canyon feel small. To feel what it's like to jump and soar in one-third gravity. To see Phobos streak overhead like it's in a hurry. To visit the very domes where humanity took its next step.

Mars isn't the end of the journey. But it's the first place where we proved we could build a new beginning.



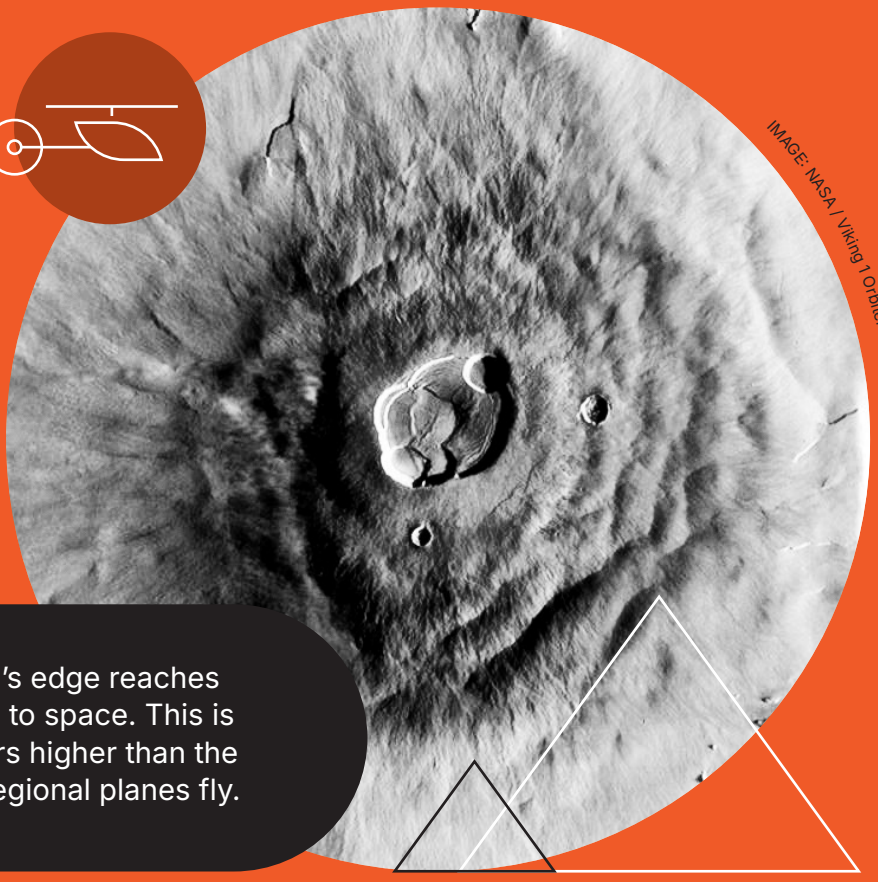
What to Visit?

Mind-Blowing Attractions: A Hitchhiker's Guide to the Red Planet

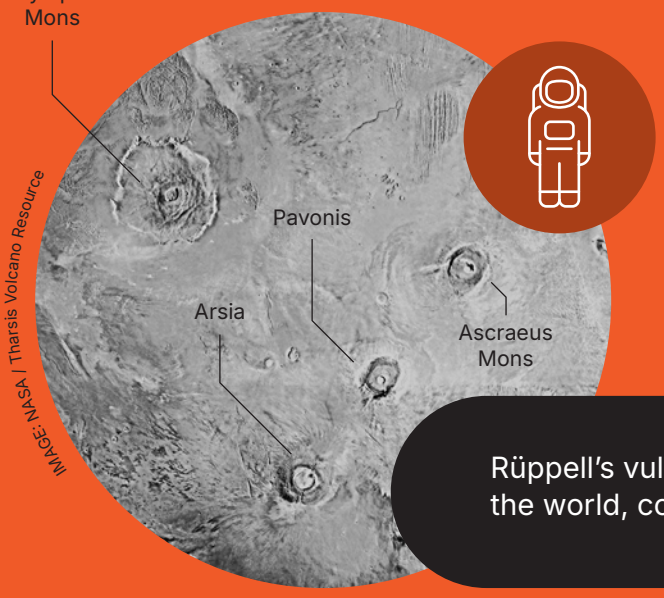
OLYMPUS MONS

(Helicopter Sightseeing)

The tallest mountain in the Solar System. Standing 21.9 km high (almost three times the height of Mt. Everest), 600 km wide, roughly the size of Arizona. The slope? Just 5%. In theory, it's possible to walk up, though you'd need weeks and a serious oxygen supply.



The cliff at Olympus Mons's edge reaches up to 8 km—literally a wall to space. This is a couple of hundred meters higher than the regular altitude at which regional planes fly.



THARSIS REGION

("Aerial Jumps" in Exo-Suits)

This plateau is home to four colossal volcanoes. It rises 10 km above the surrounding terrain and is visible from orbit.

Rüppell's vulture, thought to be the highest flying bird in the world, could still fly over the top of these volcanoes.

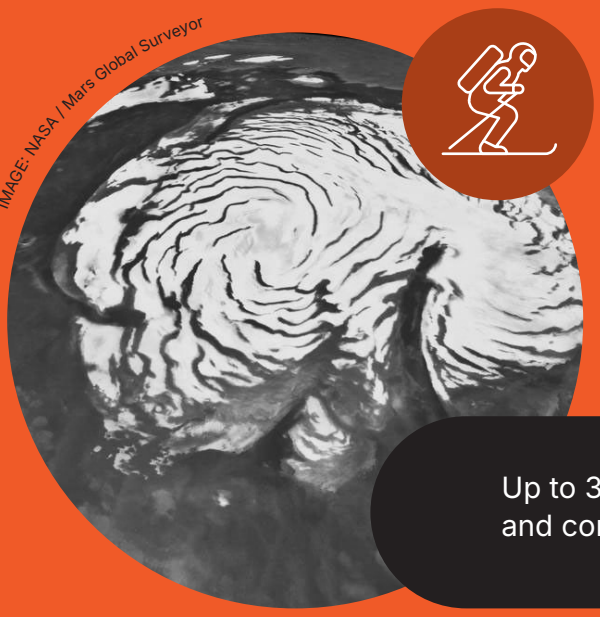


IMAGE: NASA / Mars Global Surveyor

THE POLAR CAPS

(Dune Skiing)

Mars's polar ice caps melt in the summer and refreeze in winter. They contain both water ice and dry ice (CO_2). Depending on the weather, snow or sand dune skiing is possible.

Up to 30% of Mars's atmosphere freezes seasonally and condenses into dry ice on the polar caps.

VALLES MARINERIS

(Glass Bridge Visit)

A massive canyon system. 3000 km long, 600 km wide, and 8 km deep. The canyon is a sign of Mars' geological history, with evidence of past water flow.



IMAGE: NASA / Viking 1 Orbiter

Overlay of the U.S. map for size

Valles Marineris is recognized as the largest canyon in the Solar system. It's like stretching the Grand Canyon across the entire U.S. and doubling its depth. (The Grand Canyon in Arizona, U.S. is 800 kilometers long, 30 kilometers across, and 1.8 kilometers deep).

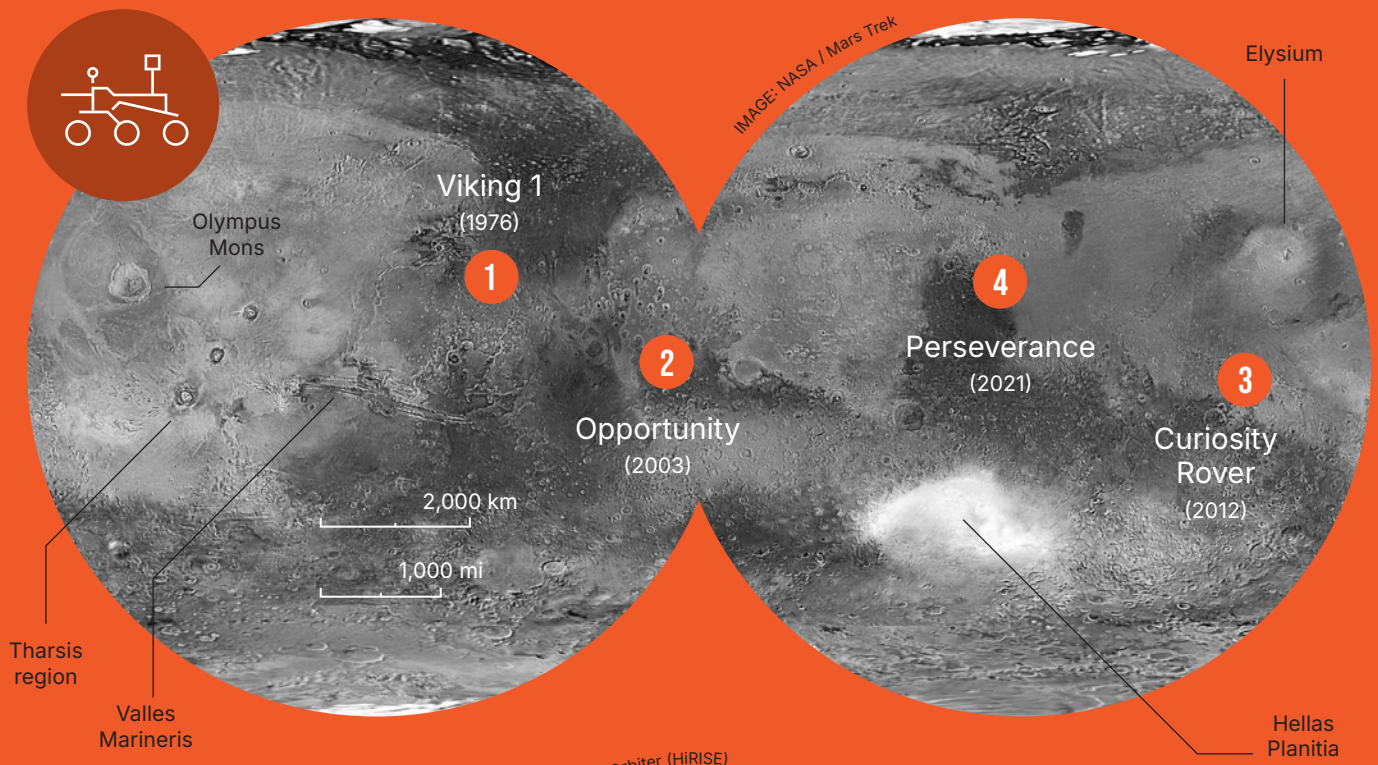
Optional Excursions

(Extra Fees Applicable)

MARS MISSION LANDMARKS

(Choose Between Locations)

"Selfie spots" and digital holograms showcase original missions. It is strictly prohibited to wander off the trail.



MEDUSAE FOSSAE

(Alien Sightseeing Tour)

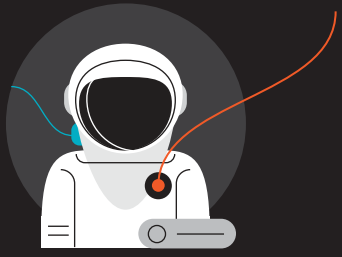
A region of mysterious formations, the "Martian Bermuda." Some believe an ancient spacecraft crashed here (digging is prohibited).



A must-see for ancient alien fans.

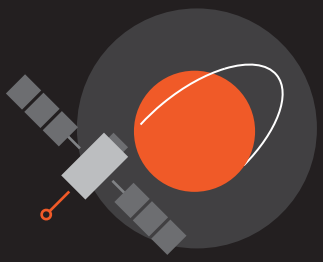
Why Mars Matters

As Mars becomes a hub for all of the outer exploration in the Solar System, I can only look to the bluish Mars skies and see one pale blue dot. I was born on that dot. Now, I'm here. And I'm not alone.



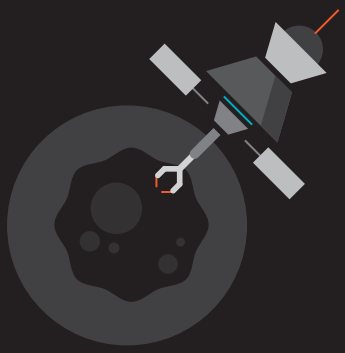
Choosing the First Martians

Choosing the first colonizers was a multi-month process. NASA had 637 different parameters measured. This was essential to prove Mars could support life via ISRU by extracting water ice and CO_2 to produce fuel, oxygen, and life support, reducing dependency on Earth.



Building Mars Together

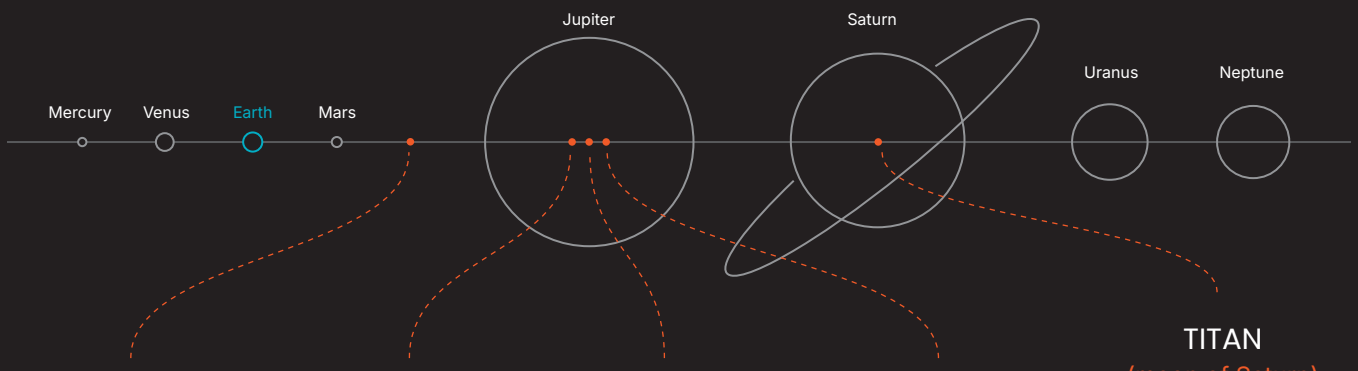
Under the Outer Space Treaty, states remained responsible for all space activities. That led to a deep cooperation between governments and tech giants, making Mars infrastructure feasible.



Gateway to Asteroids

Even later, Mars would serve as an ideal staging ground for rare mineral asteroid mining and deep-space industry, offering significantly lower energy (delta-V) costs to reach main-belt asteroids than launching from Earth.

LIKELY NEXT TARGETS FOR HUMAN EXPANSION



CERES
(a dwarf planet in the Asteroid Belt)

Water-rich, potential oxygen and hydrogen mining.

EUROPA
(moon of Jupiter)

Covered in water ice, a strong candidate for subsurface ocean and microbial life.

GANYMEDE
(moon of Jupiter)

Unique moon with magnetic field, possible subsurface ocean.

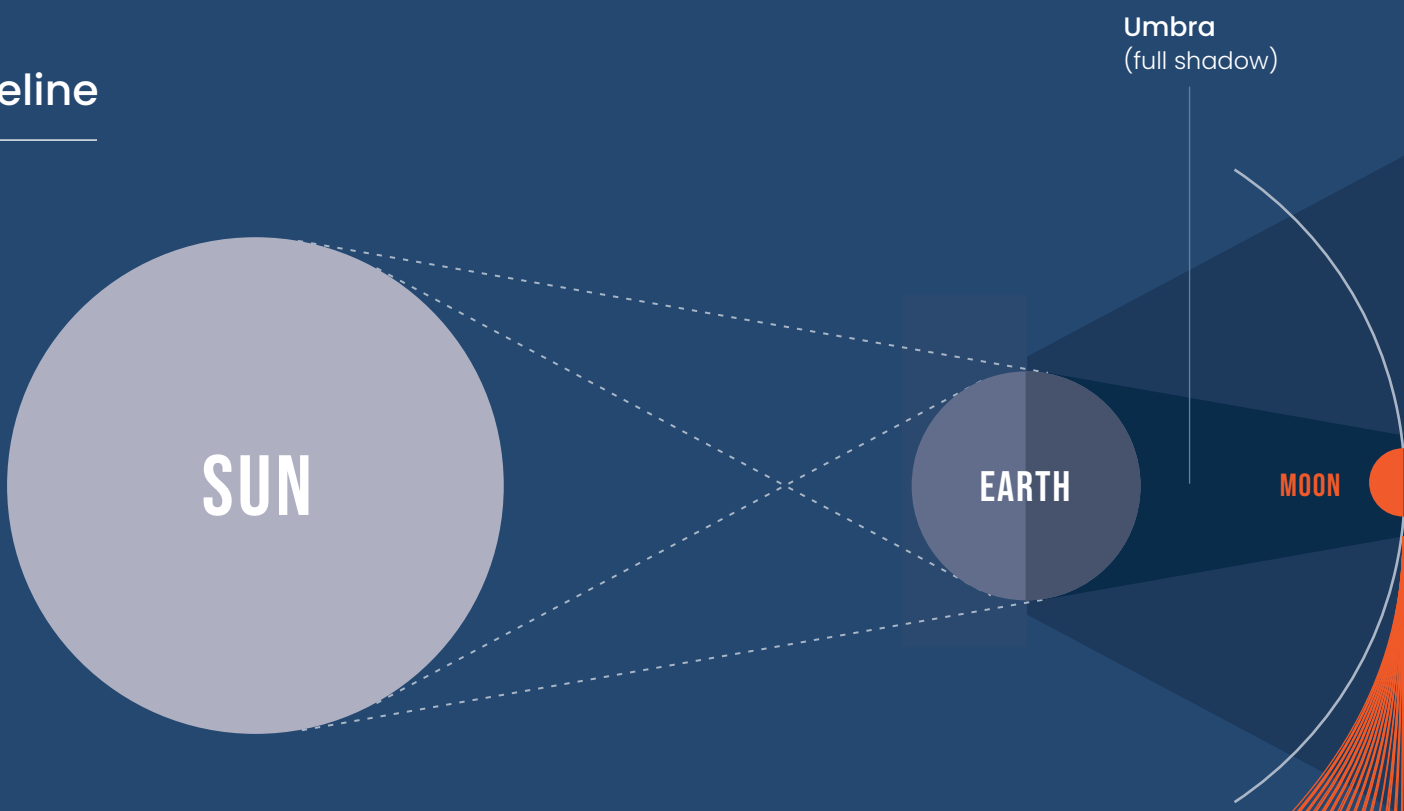
CALLISTO
(moon of Jupiter)

Farther from Jupiter's radiation belts than Europa or Ganymede. Water ice present.

TITAN
(moon of Saturn)

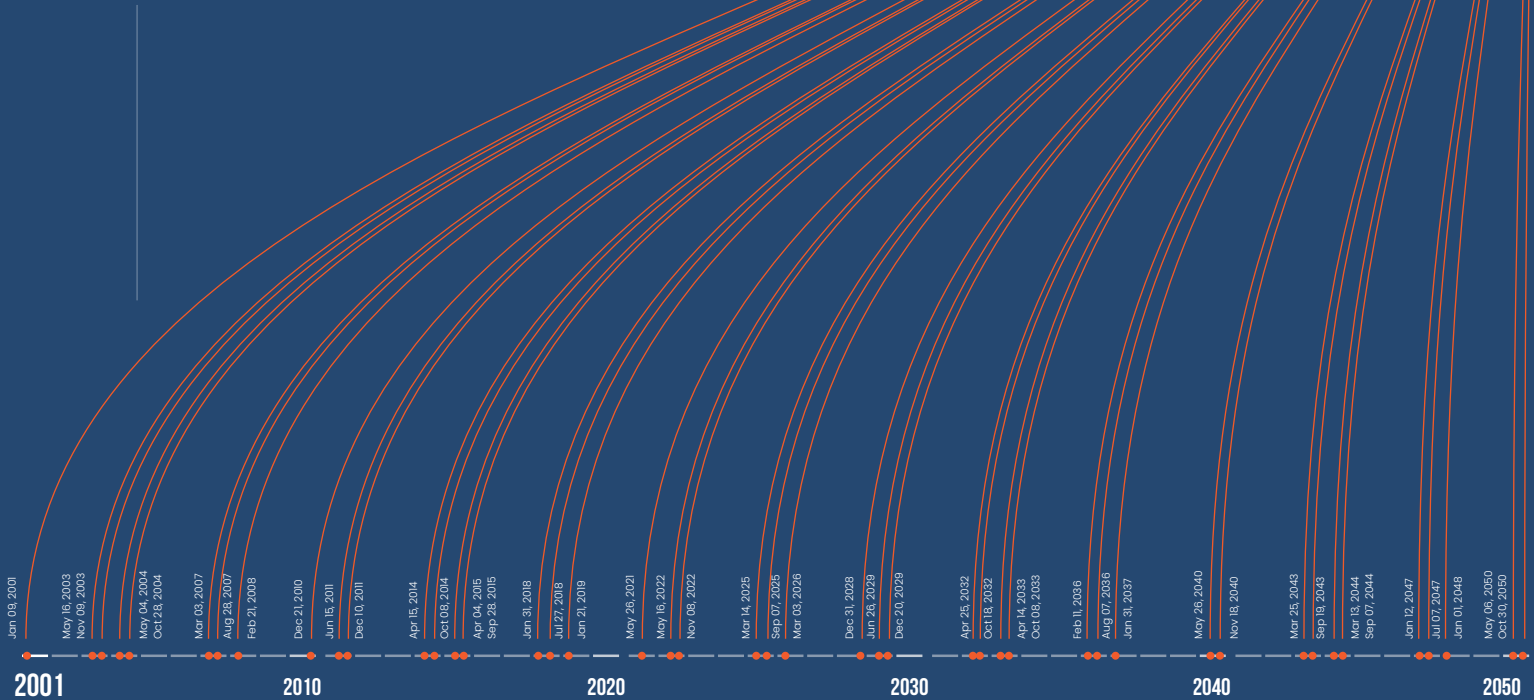
Thick nitrogen atmosphere, lakes of methane and ethane. Potential for long-term habitat and fuel production.

Timeline



85

During the 21st century, Earth will experience 228 lunar eclipses, 85 of which will be total — representing 37.3% of all lunar eclipses in this period.



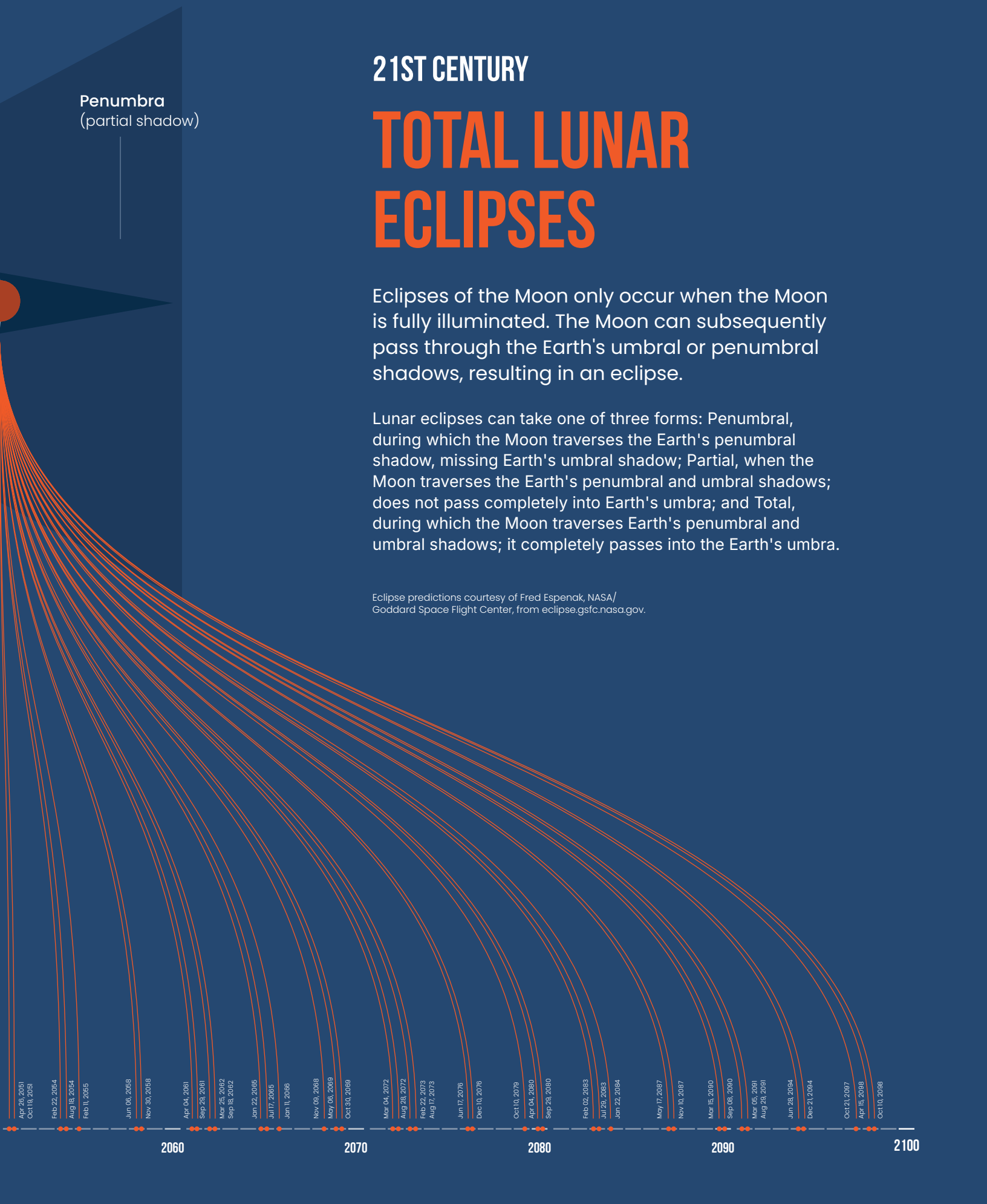
21ST CENTURY

TOTAL LUNAR ECLIPSES

Eclipses of the Moon only occur when the Moon is fully illuminated. The Moon can subsequently pass through the Earth's umbral or penumbral shadows, resulting in an eclipse.

Lunar eclipses can take one of three forms: Penumbral, during which the Moon traverses the Earth's penumbral shadow, missing Earth's umbral shadow; Partial, when the Moon traverses the Earth's penumbral and umbral shadows; does not pass completely into Earth's umbra; and Total, during which the Moon traverses Earth's penumbral and umbral shadows; it completely passes into the Earth's umbra.

Eclipse predictions courtesy of Fred Espenak, NASA/
Goddard Space Flight Center, from eclipse.gsfc.nasa.gov.



How Women Shaped the World of Technology

Written by Kristina Glodic

From cars to space shuttles, from war zones to everyday household items, women have quietly revolutionized the world with inventions we rarely hear about.

When you hear the name Hedy Lamarr, you probably first think of a famous Hollywood actress—but she was also a brilliant inventor.

During World War II, together with composer George Antheil, she developed a frequency-hopping wireless communication system that allowed torpedoes to be guided without revealing their signal. Although the military didn't take her invention seriously at the time because it "came from an actress," decades later, this technology became the foundation for Wi-Fi, Bluetooth, and GPS. Hedy often said that her true passion was inventing, even though she had to keep it hidden.

Although the modern world often feels like something we take for granted, it's important to remember that behind many of the technologies, objects, and everyday conveniences we now see as essential stand generations of women whose intellect, perseverance, and courage were crucial in shaping the future. These women often worked quietly, without recognition, facing deeply rooted prejudice and social limitations, in times when entering the so-called "male world" of science, engineering, technology, or industry was considered unacceptable.

Despite this, they had the vision, confidence, and determination to think outside the box. They chose to create, to invent, and to change the rules of the game. Their inventions not only improved daily life but also laid the groundwork for the technologies that power our world today.

Discover the most original inventions by women who left an indelible mark on fields long dominated by men.

- Automotive Industry
- Aviation and Space
- Computers and Programming
- Military Technology
- Entertainment
- Medicine
- Energy



5,000 BC

Beer

Today, beer is often associated with men, ads, and football fans. But nearly 7,000 years ago in Sumer and Mesopotamia, it was invented and brewed by women. Only women were allowed to brew and serve this sacred drink, believed to be a gift from a goddess. For centuries, women alone ran breweries and were the only ones permitted to drink beer.



1843

First Computer Algorithm

Nowadays, we often hear about algorithms, especially when social media doesn't show us what we want. We have Ada Lovelace, an English mathematician and the world's first programmer, to thank for that. While translating lectures, she added notes that became the world's first code.

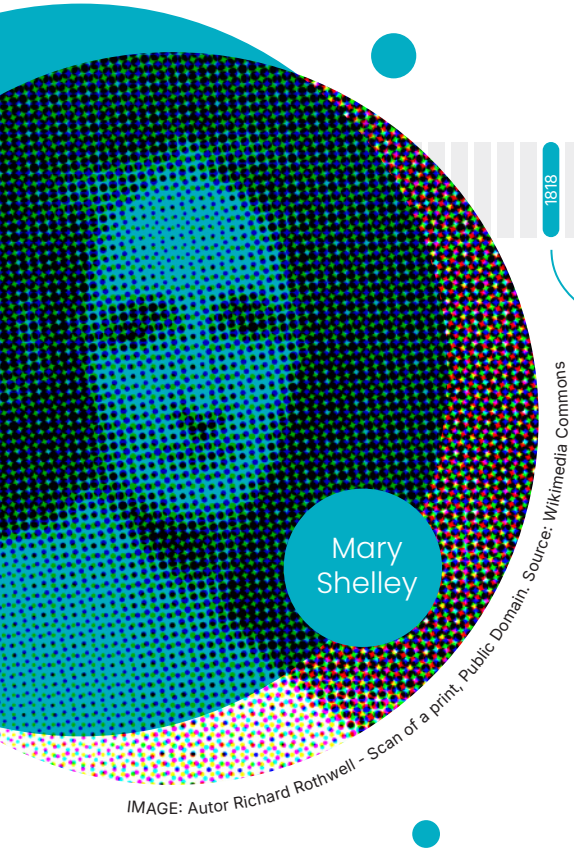


IMAGE: Autor Richard Rothwell - Scan of a print, Public Domain. Source: Wikimedia Commons

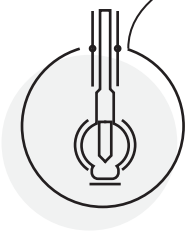
1818 1820 1830 1840 1843 1845 1850



1818

Science Fiction

English novelist Mary Shelley defined a new literary genre with Frankenstein, launching a tradition that's endured for more than 200 years. For a woman born in an era when writing was considered a "man's profession," this was an astonishing accomplishment.



1845

Telescope and Light for Submarines

Almost a century before WWI, American inventor Sarah Mather patented a device that combined a telescope and light, allowing surface observation of underwater objects. Although not used in true submarines, her invention aided shipwreck surveillance and military operations during the American Civil War. She enabled silent surface warfare tactics.

1893

Car Heater

Although automobiles were long considered a "man's domain," American mechanical engineer Margaret A. Wilcox designed the first car cabin heater as early as the late 19th century—an innovation that made driving in cold weather far more comfortable.

1903

Windshield Wipers

While riding through a New York snowstorm, a young woman named Mary Anderson saw a streetcar driver constantly stop to wipe the windshield. She patented the first automatic rain and snow wiper, which soon became standard and remains vital safety equipment today.

1914

Turn Signals and "STOP" Lights

Hollywood star Florence Lawrence invented early traffic signals to improve safety, including the first turn signals—small flags on the bumper—as well as the first turn indicator and a full-stop signal activated by applying the footbrake. Her inventions still save lives today.

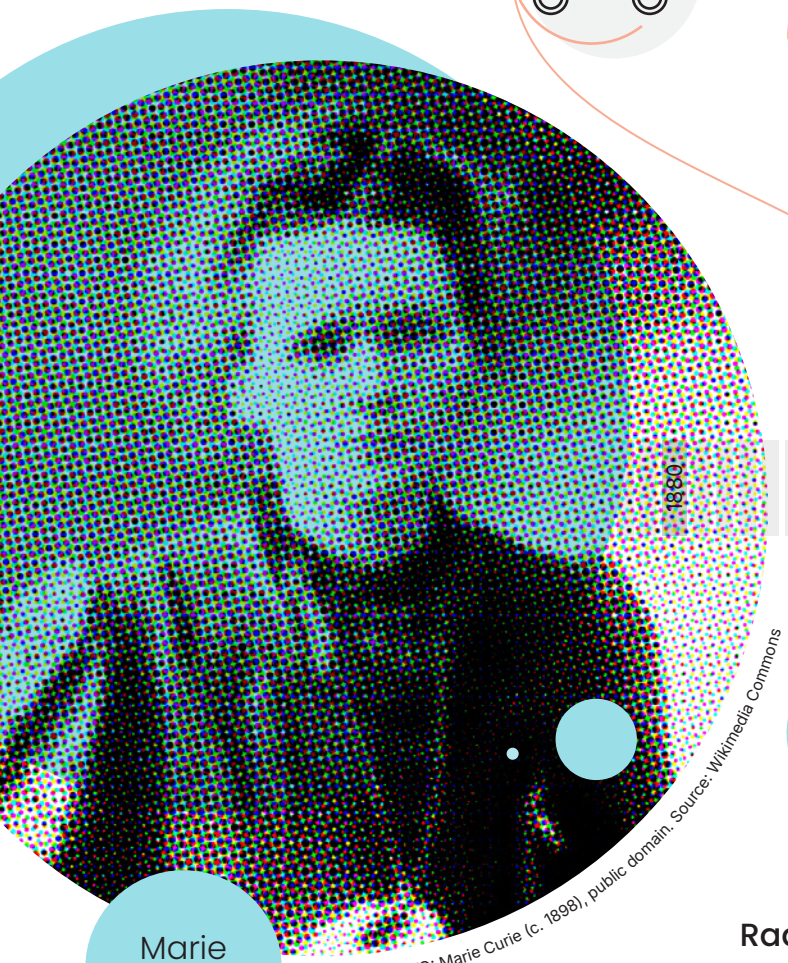


PHOTO: Marie Curie (c. 1898), public domain. Source: Wikimedia Commons

Marie Curie



IMAGE: publicity photo (1908), public domain. Source: Wikimedia Commons

Florence Lawrence

1880 1890 1893 1900 1903 1903 1910 1914 1914

1903

Radioactivity

Radioactivity, including the discovery of polonium and radium in 1898, was uncovered by French physicist Marie Curie in collaboration with her husband, Pierre Curie. During World War I, she worked on the development of X-ray technologies and later studied radioactive substances and their medical applications.

1914

Electric Refrigerator

Before American inventor Florence Parpart, people relied on iceboxes that needed constant upkeep. Her electric refrigerator circulated water and cooled the interior automatically, eliminating the need for ice blocks and helping reduce food spoilage—quickly becoming a household standard.

1917

Aircraft Engine Muffler

Despite being excluded from the military and engineering sectors, American inventor El Dorado Jones—known as the "Iron Woman"—pushed boundaries. She ran a metalworking factory and invented a muffler for airplane engines that reduced noise without compromising performance.

1947

Solar Heating

Dr. Mária Telkes, an American physical chemist and biophysicist known as the "Sun Queen," developed one of the first solar- powered home heating systems. Using Glauber's salts to store and release heat, her invention was a key step toward sustainable heating without fossil fuels.

1959

The First Compiler

Computer pioneer and naval officer Grace Murray Hopper made it possible for computers to "understand" human language by developing the compiler, which translates human language into machine code, and COBOL, one of the first modern programming languages.

1969

Moon Landing Software

Without American computer scientist Margaret Hamilton and her task-prioritizing software logic, Neil Armstrong might never have stepped on the Moon. She developed the crucial software for the Apollo mission, making a safe landing possible.

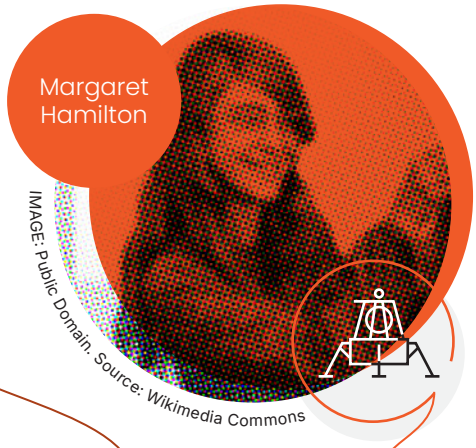
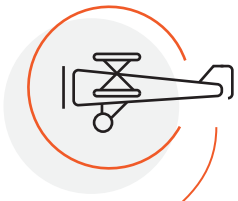
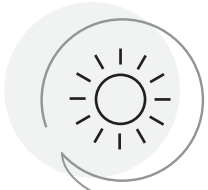
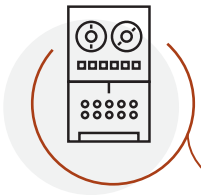


IMAGE: Public Domain, Source: Wikimedia Commons









1930s

Rock 'n' Roll

Though rock 'n' roll is often seen as a male revolution, American guitar player and singer Sister Rosetta Tharpe was blending folk, gospel, and blues into a sound that would become rock decades later. Her style influenced legends like Elvis Presley and Johnny Cash, making her the godmother of rock 'n' roll.

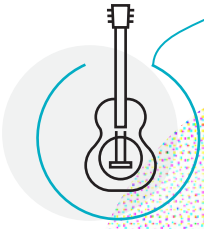


IMAGE: Publicity photo (1938), public domain, Source: Wikimedia Commons

1965

Kevlar

Thousands of soldiers owe their lives to American chemist Stephanie Kwolek. While working on better car tires in 1965, she discovered Kevlar—a lightweight fiber up to 5 times stronger than steel and up to 20 times stronger underwater. Today, it's a core component of bulletproof vests, helmets, and military armor.



1974

Rocket Propulsion System

The hydrazine-powered jet propulsion system—so efficient and elegant that it remains the standard in self-propelled satellites today—was invented by Canadian-American rocket and jet propulsion engineer Yvonne Brill. She simplified complex fuels and enhanced satellite functionality.

1980

Space Station Batteries

We owe the nickel-hydrogen batteries that supply sufficient energy to the International Space Station during orbital nights to the talented Puerto Rican scientist Olga Gonzalez-Sanabria. Her team improved the battery separators, significantly extending their lifespan to over 15 years and more than 20,000 charge cycles. Thanks to these batteries, the ISS never loses power.



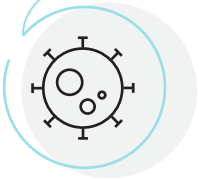
Olga Gonzalez-Sanabria

IMAGE: NASA





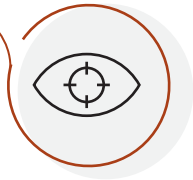
1974 1980 1983 1987 1990 2000 2010 2020



1983

Human Immunodeficiency Virus (HIV)

The human immunodeficiency virus, whose discovery led to tests for early detection of infection and the development of antiretroviral drugs, was identified by French scientist Françoise Barré-Sinoussi. Thanks to her work, AIDS gradually became a manageable chronic illness.



1987

Optical Analysis System

You can thank engineer Ellen Ochoa for robotic precision. She improved laser-guided systems and developed optical tech for spotting defects—still used in robotics and quality control today.

Despite being shut out of classrooms, labs, and boardrooms, women have profoundly shaped our world. Their inventions— often born from overlooked needs and intuitive problem-solving— made life safer, smarter, and more sustainable.

Even today, we can find inspiration in the words of inventor Hedy Lamarr, spoken more than half a century ago:

> Hope and curiosity about the future seemed better than guarantees. The unknown was always so attractive to me...and still is."
>
> — Hedy Lamarr

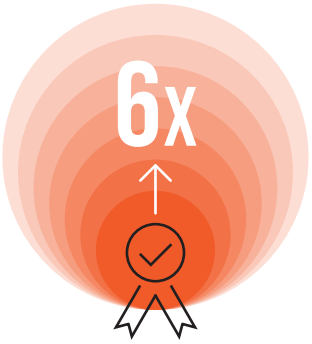


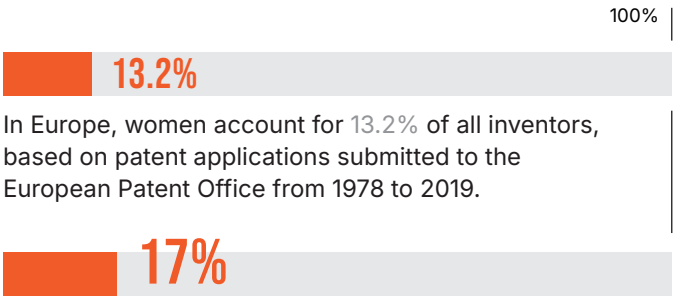
IMAGE: Hedy Lamarr in The Heavenly Body (1944), publicity photo. Public domain. Source: Wikimedia Commons.

Her simple yet powerful message, "Think Big," continues to remind us of the importance of boldness, imagination, and belief in one's own potential.

WOMEN AND PATENTS TODAY

In Europe, the proportion of women inventors increased more than sixfold (from 2% to 13.2%) between 1978 and 2019, but despite this progress, a considerable gender gap in inventorship remains.





In Europe, women account for 13.2% of all inventors, based on patent applications submitted to the European Patent Office from 1978 to 2019.

In the U.S., women made up only 17% of international patent holders in 2022, highlighting a persistent gender gap.

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INFOGRAPHIC
INSIGHTS

A Global Catch Story

$470B

Fishing makes up about 5% of the Primary industrial sectors. It is worth roughly $470 billion annually.



SOURCE: Worldbank, FAO / PHOTO: Boris Benko

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