

Interesting Facts About Our Earth

Elegant Earth

Alien worlds may be all the rage, with their mystique and promise, but the orb we call home, planet Earth, has all the makings for a jaw-dropping blockbuster movie: from the drama of explosive volcanoes, past meteor crashes and catastrophic collisions between rocky plates to the seeming fantasy of the ocean's deep abysses swirling with odd life and tales of the coldest, hottest, deepest, highest and all-out extreme spots. So try to stay grounded as you take a journey through some amazing facts about Earth.

Third Rock

Our home, Earth, is the third planet from the sun and the only world known to support an atmosphere with free oxygen, oceans of liquid water on the surface and — the big one — life.

Squashed Sphere

It's not a perfect sphere. As Earth spins, gravity points toward the center of our planet (assuming for explanation's sake that Earth is a perfect sphere), and a centrifugal force pushes outward. But since this gravity-opposing force acts perpendicular to the axis of Earth, and Earth's axis is tilted, centrifugal force at the equator is not exactly opposed to gravity. This imbalance adds up at the equator, where gravity pushes extra masses of water and earth into a bulge, or "spare tire" around our planet

She's Got a Waistline

Mother Earth has a generous waistline: At the equator, the circumference of the globe is 24,901 miles (40,075 kilometers).

On the Move

You may feel like you're standing still, but you're actually moving — fast. Depending on where you are on the globe, you could be spinning through space at just over 1,000 miles per hour. People on the equator move the fastest, while someone standing on the North or South pole would be perfectly still. (Imagine a basketball spinning on your finger. A random point on the ball's equator has farther to go in a single spin as a point near your finger. Thus, the point on the equator is moving faster.)

Treks Around the Sun

Oh yeah, and the Earth isn't just spinning: It's also moving around the sun at 67,000 miles (107,826 km) per hour.

It's Old

Researchers calculate the age of the Earth by dating both the oldest rocks on the planet and meteorites that have been discovered on Earth (meteorites and Earth formed at the same time, when the solar system was forming). Their findings? Earth is about 4.54 billion years old.

Gets Recycled

The ground you're walking on is recycled. Earth's rock cycle transforms igneous rocks to sedimentary rocks to metamorphic rocks and back again. The cycle isn't a perfect circle, but the basics work like this: Magma from deep in the Earth emerges and hardens into rock (that's the igneous part). Tectonic processes uplift that rock to the surface, where erosion shaves bits off. These tiny fragments get deposited and buried, and the pressure from above compacts them into sedimentary rocks such as sandstone. If sedimentary rocks get buried even deeper, they "cook" into metamorphic rocks under lots of pressure and heat. Along the way, of course, sedimentary rocks can be re-eroded or metamorphic rocks re-uplifted. But if metamorphic rocks get caught in a subduction zone where one piece of crust is pushing under another, they may find themselves transformed back into magma.

Our Moon Quakes

Moonquakes, or "earthquakes" on the moon, do occur, though they are less common and less intense than those that shake Earth. According to USGS scientists, moonquakes seem to be related to tidal stresses associated with the varying distance between the Earth and moon. Moonquakes also tend to occur at great depths, about midway between the lunar surface and its center.

Largest Earthquake

As of 2011, the largest earthquake to shake the United States was a magnitude-9.2 temblor that struck Prince William Sound, Alaska, on Good Friday, March 28, 1964. (Photos shows the Four Seasons Apartments in Anchorage, a six-story lift-slab reinforced concrete building, which cracked to the ground during the quake.) And the world's largest earthquake was a magnitude 9.5 in Chile on May 22, 1960, according to the U.S. Geological Survey (USGS).

Hot Spot

The fiery award for Earth's hottest spot goes to El Azizia, Libya, where temperature records from weather stations reveal it hit 136 degrees Fahrenheit (57.8 degrees Celsius) on Setp. 13, 1922, according to NASA Earth Observatory. There have likely been hotter locations beyond the network of weather stations. (The image was created from data collected by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Aqua satellite.)

Coldest Spot

It may come as no surprise that the coldest place on Earth can be found in Antarctica, but the chill factor is somewhat unbelievable. Winter temperatures there can drop below minus 100 degrees F (minus 73 degrees C). The lowest temperature ever recorded on Earth came from Russia's Vostok Station, where records show the air plunged to a bone-chilling minus 128.6 degrees F (minus 89.2 degrees C) on July 21, 1983, according to the USGS.

Extreme Continent

The southern continent is a place of extremes, with the Antarctic ice cap containing some 70 percent of Earth's fresh water and about 90 percent of its ice.

Weird Gravity

Because our globe isn't a perfect sphere, its mass is distributed unevenly. And uneven mass means slightly uneven gravity.

One mysterious gravitational anomaly is in the Hudson Bay of Canada (shown above). This area has lower gravity than other regions, and a 2007 study finds that now-melted glaciers are to blame.

The ice that once cloaked the area during the last ice age has long since melted, but the Earth hasn't entirely snapped back from the burden. Since gravity over an area is proportional to the mass atop that region, and the glacier's imprint pushed aside some of the Earth's mass, gravity is a bit less strong in the ice sheet's imprint. The slight deformation of the crust explains 25 percent to 45 percent of the unusually low gravity; the rest may be explained by a downward drag caused the motion of magma in Earth's mantle (the layer just beneath the crust), researchers reported in the journal *Science*.

Creeping Magnetic Pole

Earth has a magnetic field because of the ocean of hot, liquid metal that sloshes around its solid iron core, or that's what geophysicists are pretty certain is the cause. This flow of liquid creates electric currents, which, in turn, generate the magnetic field. Since the early 19th century, Earth's magnetic north pole has been creeping northward by more than 600 miles (1,100 kilometers), according to NASA scientists. The rate of movement has increased, with the pole migrating northward at about 40 miles (64 km) per year currently, compared with the 10 miles (16 km) per year estimated in the 20th century.

Tallest Mountain

And the title for tallest mountain goes to ... either Mount Everest or Mauna Kea. The summit of Mount Everest is higher above sea level than the summit of any other mountain, extending some 29,029 feet (8,848 meters) high. However, when measured from its true base to summit, Mauna Kea takes the prize, measuring a length of about 56,000 feet (17,170 m), according to the USGS.

Here are some of Mauna Kea's detailed measurements: The highest point is 13,680 ft (4,170 m) above sea level; the flanks of Mauna Loa continue another 16,400 ft (5,000 m) below sea level to the seafloor; and the volcano's central portion has depressed the seafloor another 26,000 ft (8,000 m) in the shape of an inverted cone, reflecting the profile of the volcano above it

Pole Flip-Flops

In fact over the past 20 million years, our planet has settled into a pattern of a pole reversal about every 200,000 to 300,000 years; as of 2012, however, it has been more than twice that long since the last reversal. These reversals aren't split-second flips, and instead occur over hundreds or thousands of years. During this lengthy stint, the magnetic poles start to wander away from the region around the spin poles (the axis around which our planet spins), and eventually end up switched around, according to Cornell University astronomers.

Two Moons?

Earth may once have had two moons. A teensy second moon — spanning about 750 miles (1,200 km) wide — may have orbited Earth before it catastrophically slammed into the other one. This titanic clash may explain why the two sides of the surviving lunar satellite are so different from each other, said scientists in the Aug. 4, 2011, issue of the journal *Nature*.

Where Rocks Walk

Rocks can walk on Earth, at least they do at the pancake-flat lakebed called Racetrack Playa in Death Valley. There, a perfect storm can move rocks sometimes weighing tens or hundreds of pounds. Most likely, ice-encrusted rocks get inundated by meltwater from the hills above the playa, according to NASA researchers. When everything's nice and slick, a stiff breeze kicks up, and whoosh, the rock is off.

Reaching the Top

On May 8, 1978, climbers Reinhold Messner and Peter Habeler became the first to summit Everest without the aid of oxygen. Messner described his feelings upon reaching the top like this: "I am nothing more than a single narrow gasping lung, floating over the mists and summits."

Longest Mountain Chain

To find the world's longest mountain range you'd have to look down, way down. Called the mid-ocean ridge, the underwater chain of volcanoes spans some 40,389 miles (65,000 km). As lava erupts from the seafloor it creates more crust, adding to the mountain chain, which stretches around the globe.

Most Happening Places

Coral reefs support the most species per unit area of any of the planet's ecosystems, rivaling rain forests. And while they are made up of tiny coral polyps, together they are the largest living structures on Earth, with some visible even from space, according to NOAA.

Deepest Spot

How low can you go? The deepest point on the ocean floor is 35,813 feet (10,916 meters) below sea level in the Mariana Trench. The lowest point on Earth not covered by ocean is 8,382 feet (2,555) meters below sea level, but good luck walking there: That spot is in the Bentley Subglacial Trench in Antarctica, buried under lots and lots of ice.

Landly Lows

The lowest point on land, however, is relatively accessible. It's the Dead Sea between Jordan, Israel and the West Bank. The surface of this super-salty lake is 1,388 feet (423 m) below sea level.

Where Lakes Explode

... And lakes explode. In Cameroon and on the border of Rwanda and the Democratic Republic of the Congo there are three deadly lakes: Nyos, Monoun and Kivu. All three are crater lakes that sit above volcanic earth. Magma below the surface releases carbon dioxide into the lakes, resulting in a deep, carbon dioxide-rich layer right above the lakebed. That carbon dioxide can be released in an explosion, asphyxiating any passersby

Losing Water

As the climate changes, glaciers are retreating and contributing to rising sea levels. It turns out that one particular glacier range is contributing a whopping 10 percent of all the meltwater in the world. That honor belongs to the Canadian Arctic, which lost a volume equivalent to 75 percent of Lake Erie between 2004 and 2009.

Measured Melt

Humans leave our mark on the planet in all sorts of weird ways. For example, nuclear tests in the 1950s threw a dusting of radioactivity into the atmosphere. Those radioactive particles eventually fell as rain and snow, and some of that precipitation got trapped in glaciers, where it forms a little "you are here" layer for scientists trying to date the age of glacial ice. Some glaciers are melting so fast, however, that this half-century of history is gone.

It Was Purple

It used to be purple ... well, life on early Earth may have been just as purple as it is green today, suspects Shil DasSarma, a microbial geneticist at the University of Maryland. Ancient microbes,

he said, might have used a molecule other than chlorophyll to harness the sun's rays, one that gave the organisms a violet hue, he suggests.

DasSarma thinks chlorophyll appeared after another light-sensitive molecule called retinal was already present on early Earth. Retinal, today found in the plum-colored membrane of a photosynthetic microbe called halobacteria, absorbs green light and reflects back red and violet light, the combination of which appears purple. The idea may explain why even though the sun transmits most of its energy in the green part of the visible spectrum, chlorophyll absorbs mainly blue and red wavelengths

It's Electric!

Thunder and lightning reveal our planet's fiercer side. A single stroke of lightning can heat the air to around 54,000 degrees Fahrenheit (30,000 degrees Celsius), according to educational website Windows to the Universe, causing the air to expand rapidly. That ballooning air creates a shock wave and ultimately a boom, better known as thunder.

Covered in Seas

The oceans cover some 70 percent of Earth's surface, yet humans have only explored about 5 percent, meaning 95 percent of the planet's vast seas have never been seen.

Filled with Riches

And these vast seas are rich, holding more than 20 million tons of gold. But don't grab your mining hat just yet, the metal is so dilute that each liter of seawater contains, on average, about 13 billionths of a gram of gold. Undissolved gold is also tucked away in rocks on the seafloor, and though there's not efficient way of getting at that precious metal, according to NOAA, if we could extract all of it, each person on Earth could have 9 pounds of the shiny stuff.

Sprinkled with Cosmic Dust

Every day our planet is sprinkled with fairy dust ... or dust from the heavens. On a daily basis, about 100 tons of interplanetary material (mostly in the form of dust) drifts down to the Earth's surface. The tiniest particles are released by comets as their ices vaporize near the sun. (Shown here, a Hubble Space Telescope close-up image of part of NGC 7023, or the Iris Nebula, showing the area is clogged with cosmic dust.)

Treks Around a Star

The Earth is approximately 93 million miles (150 million kilometers) from the sun. At this distance, it takes about 8 minutes and 19 seconds for sunlight to reach our planet.

How Mountains Form

While the shifting slabs of rocks called tectonic plates are unseen to us, some of their effects are monumental. Take the Himalayas, which stretch 1,800 miles (2,900 km) along the border between India and Tibet. This immense mountain range began to form between 40 million and 50 million years ago, when India and Eurasia, driven by plate movement, collided. The tectonic crash led to the jagged Himalayan peaks.

Most Active Erupter

Hawaii's Kilauea volcano does pop its top rather frequently, it's not Earth's most active erupter. That title goes to the Stromboli Volcano, off the west coast of southern Italy, which has been erupting nearly continuously for over 2,000 years, according to the U.S. Geological Survey. Its spectacular incandescent explosions have earned it the moniker "Lighthouse of the Mediterranean."

Super-Colossal Eruption

The largest volcanic eruption recorded by humans occurred in April 1815, the peak of the explosion of Mount Tambora. The eruption ranked 7 (or "super-colossal") on the Volcanic Explosivity Index (VEI), which goes from 1 to 8 and is somewhat akin to the magnitude scale for earthquakes. The explosion is said to have been so loud it was heard on Sumatra Island, more than 1,200 miles (1,930 km) away. The death toll from the eruption was estimated at 71,000 people, and clouds of heavy ash descended on many far-away islands

Crowded Coastlines

Coastlines cover about 20 percent of U.S. land area (not including Alaska), and are home to more than 50 percent of the U.S. population, according to the National Oceanic and Atmospheric Administration (NOAA).

Biggest Basin

The Pacific Ocean is by far Earth's largest ocean basin, covering an area of about 59 million square miles (155 million square kilometers) and containing more than half of the free water on Earth, according to NOAA. It's so big that all of the world's continents could fit into the Pacific basin.

Breathing Giants

When we think about big life, whales and elephants come to mind. But try on this tree for size: The General Sherman giant sequoia is the largest known stem tree by volume on the planet. The trunk of the tree contains slightly more than 52,500 cubic feet (1,486.6 cubic meters) of material. (Shown here, Giant Forest, Sequoia National Park.)

Largest Living Thing

If you want to pinpoint the biggest organism on the planet, though, your best bet might be a really huge fungus. In 1992, scientists reporting in *Nature* revealed to the world a *Armillaria*, or honey mushroom, fungal organism that spans 2,200 acres in Oregon. There's a slight chance that the offshoots of this mega-fungus aren't clones, but are simply closely related, but we're in awe either way.

World's Smallest Mammal

On the other end of the spectrum, there are plenty of teeny-tiny organisms on Earth, all the way down to single-cell life. But let's focus on something a little more cuddly: the Kitti's hog-nosed bat. This vulnerable species found in southeast Asia is only about 1 inch (29-33 millimeters) long and weighs only 0.071 ounces (2 grams), putting it in the running with Etruscan shrews, which are lighter but longer, for the world's smallest mammal.

Crowded City

Don't like crowds? Stay away from Manila. This city in the Philippines is the most densely populated in the world, with the most people crammed into the smallest city limits (outlying suburbs don't count). As of the 2007 census, 1,660,714 people lived in 14.8 square miles (38.55 square kilometers).

Open Space

Lovers of solitude might try Greenland on for size. This nation boasts the least population density of any on Earth. As of 2010, 56,534 people lived in 836,330 square miles (2,166,086 square kilometers) of elbow room. Most of the settlements in Greenland are clustered on the coast, however, so this low population density is somewhat misleading.

Driest Spot

The driest spot on Earth is the Atacama Desert of Chile and Peru. In the center of this desert, there are places where rain has never been recorded.

Information Found On: (<http://www.livescience.com/19102-amazing-facts-earth.html>)