World׳s energy demand is growing fast because of population explosion and technological advancements. It is therefore important to go for reliable, cost effective and everlasting [renewable energy source](https://www.sciencedirect.com/topics/engineering/renewable-energy-source) for energy demand arising in future. Solar energy, among other renewable sources of energy, is a promising and freely available energy source for managing long term issues in energy crisis. Solar industry is developing steadily all over the world because of the high demand for energy while major energy source, fossil fuel, is limited and other sources are expensive. It has become a tool to develop economic status of developing countries and to sustain the lives of many underprivileged people as it is now cost effective after a long aggressive researches done to expedite its development. The solar industry would definitely be a best option for future energy demand since it is superior in terms of availability, cost effectiveness, accessibility, capacity and efficiency compared to other renewable energy sources

For most of human history, we kept time by Earth’s place in space. The second was a subdivision of an Earth day, and, later, an Earth year: The timespan was defined by where Earth was. Then came the atomic clock.

Scientists delved into atoms of the element cesium, where a process called the hyperfine transition emits and absorbs microwaves, which scientists could time very precisely with the help of a vibrating quartz crystal. That underpins the basis of how scientists measure time today, and allowed them to craft a more accurate [definition of the second](https://www.npl.co.uk/si-units/second/) in 1967.

Now, two different groups have created clocks that can measure subtle physics within the clocks themselves. The research teams published their respective results in [two](https://www.nature.com/articles/s41586-021-04349-7) [different](https://www.nature.com/articles/s41586-021-04344-y) papers in the journal Nature on February 16. These new clocks can measure one of Albert Einstein’s predictions—time dilation due to gravity—on the smallest scale yet.

Cutting-edge atomic clocks such as these use neither cesium nor quartz. Instead, their foundation is pancake-like structures of super-chilled strontium atoms. Their operators can control the atoms using a laser that emits visible light. Hence, they’re called “optical clocks.”

The way we eat food has changed a lot over the years. But the one thing that hasn’t changed is that if you’re living in wintery climates like the Italian Alps, having a hearty meal of carbohydrates and fatty meats can put you on the right track for a tough hike.

Inside his mummified stomach, researchers were able to find lipid-rich, almost bacon-like mountain goat meat. Additionally, they found fibrous bread and charcoal that points to a potential bread-like product cooked on a hot rock—more or less the earliest known iteration of a pancake. These definitely weren’t Instagram-worthy brunch dishes, but they did the trick in terms of prepping ancient humans for their prehistoric adventures.

Earlier this month, a small electric airplane [lifted off the ground](https://www.rolls-royce.com/media/press-releases/2021/15-09-2021-rr-all-electric-spirit-of-innovation-takes-to-the-skies-for-the-first-time.aspx) for the first time, and completed a brief, roughly 15-minute long flight. The 23-foot-long plane, called the Spirit of Innovation, is designed to be an electric speed demon. Rolls-Royce, the company that makes it, plans to fly the machine faster than 300 mph before the year is out, and smash a speed record for electric aircraft in the process if it can do so.

“It’s a thoroughbred, all-electric racing plane,” says Matheu Parr, who leads [the project](https://www.rolls-royce.com/innovation/accel.aspx) for Rolls-Royce.

Here’s what to know about the experimental aircraft and why Rolls-Royce is flying it.

How does the plane work?

The aircraft, which has flown three times, resembles a regular airplane on the outside. In fact, it began as a kit, a [Sharp Nemesis NXT](https://en.wikipedia.org/wiki/Sharp_Nemesis_NXT), a type of small aircraft known for competing in the [Reno Air Races](https://www.popsci.com/reno-air-race-2019-gallery/) in Nevada; in 2009 it reached speeds of more [than 400 mph](https://reports.airrace.org/2009/2009.SuperSport.Gold.Results.html). “It used to have a really large internal combustion engine at the front, and then it had a huge fuel tank that sat right behind it,” Parr says. Of course, that stuff isn’t necessary in an electric aircraft, so the team removed it. “What we had left was this huge volume of space at the front of the aircraft,” he says. That space gave them room to install new components.

Unlike other electric planes like [this one](https://www.popsci.com/technology/kitty-hawk-electric-aircraft-heaviside/) from Kitty Hawk, it needs a human pilot to fly it.

## How fast has it flown?

On its first flight, it hit an [indicated airspeed](https://www.popsci.com/plane-air-ground-speed/) of about 210 miles per hour. “We weren’t even trying that hard,” Parr laughs. “We almost got there straight away.”

“We didn’t mean to go that fast on the first flight,” he adds.

When they actually try to break the record, it will happen with an official course and careful measurements. The record they’re trying to surpass for electric aircraft was [set in 2017 and is around 213 mph.](https://www.guinnessworldrecords.com/world-records/92771-fastest-electric-aircraft) In other words, the Spirit of Innovation is already approaching the record, at least unofficially. Their goal is to fly at 300 mph. (Update: Parr notes via email that the plane has now hit a top speed of 265 mph.)