Meagan Shrewsbury and Kim Galyen dress as aliens during the solar eclipse *REUTERS/Scott Morgan*

Scientists might finally have worked out what aliens would look like. And they're shockingly familiar.

Alien life tends to be imagined as strange powerful monsters: either grey humanoids or insect-like killing machines. But they might actually look a lot more like us than we realised, according to pioneering new work by scientists looking to understand what extraterrestrials would actually look like.

The problem with imagining life on other worlds is that unfortunately we've only got one example to go by – our own. So we tend to imagine something that either looks like us or looks like something else on Earth, but there's no guarantee that would be accurate.

30
show all

Instead, the new study applies evolutionary theory to understand what alien life might look like. And it finds that it would be subject to the same processes and mechanisms that helped bring us about – leading to the conclusion they might actually look a lot like us, too.

"A fundamental task for astrobiologists (those who study life in the cosmos) is thinking about what extra-terrestrial life might be like," said Sam Levin, a researcher in Oxford's Department of Zoology. "But making predictions about aliens is hard.

"We only have one example of life – life on Earth – to extrapolate from. Past approaches in the field of astrobiology have been largely mechanistic, taking what we see on Earth, and what we know about chemistry, geology, and physics to make predictions about aliens."

That's one reason why scientists are so excited about the possibility of finding life on other planets, for instance – like the suggestion that there is alien life in our own solar system on Saturn's moon Enceladus. Looking at another form of life would signal a profound way of understanding the very possibilities of how living things arise, and what life itself means.

READ MORE

**Repeated signals detected from distant galaxy, say alien hunters**

"In our paper, we offer an alternative approach, which is to use evolutionary theory to make predictions that are independent of Earth's details," Levin said. "This is a useful approach, because theoretical predictions will apply to aliens that are silicon based, do not have DNA, and breathe nitrogen, for example."

By presuming that aliens are subject to the same kind of natural selection, the scientists can come to other conclusions. On Earth, complex species have arisen as a result of what are called major transitions – extreme events that force separate organisms to evolve into a higher, more complex organism.

The researchers note that they can't say exactly what alien life might look like – whether they have grey or green skin, big eyes or any other common look for alien life. But it does let them conclude that they would look something like us, and potentially more like humans than had been expected.

"Like humans, we predict that they are made-up of a hierarchy of entities, which all cooperate to produce an alien," said Levin. "At

each level of the organism there will be mechanisms in place to eliminate conflict, maintain cooperation, and keep the organism functioning. We can even offer some examples of what these mechanisms will be."

Of course, we don't know whether there are even other forms of alien life out there in the universe – whether it ever existed, existed and then wiped itself out, or is ready and waiting somewhere nearby for us to find it.

"'There are potentially hundreds of thousands of habitable planets in our galaxy alone," said Levin. "We can't say whether or not we're alone on Earth, but we have taken a small step forward in answering, if we're not alone, what our neighbours are like."

More about: | Aliens | Space

Reuse content



## COMMENTS

Log in or register to comment

**4 Comments** Subscribe RSS

**Marcos Marcotron** 1 hour ago

I thought it was quite a common theory that intelligent life (at least life that can create technology), could well look like us.

Two eyes, to see in 3D, two ears to hear in stereo, fingers that

can make things with precision, legs to walk around on, etc.

There may well be such beings with differences we could never imagine, and this of course would be surprising, but the idea of creatures that resemble humans and have similar functionality would not be surprising.

Reply Share 0 likes

**Terence McPiehole** 2 hours ago

Bit of a non-article, isn't it? What can we actually deduce alien life might be like, by looking at Earth?

We can deduce they may well have iron based blood. While there are life forms on Earth with Copper based blood, they are crustaceans, so not likely to adapt to being a land based Apex Predator. Oooh, I jumped a step,... successful intelligent aliens are likely to be Apex Predators, because species that spend time looking over their shoulders won't have the spare time to develop technology.

So, what does an Apex Predator need? Good senses, and intelligence, so, either binocular vision, or sonar, like bats and dolphins. Aliens could use echo location instead of having eyes, therefore.

They need to be able to manipulate their environment, so some form of digits. Not necessarily articulated using bones, maybe muscular appendages, like tentacles. Each could oppose the other, and be more versatile than a single thumb. Tentacles, that's a bit fishy,.. that brings me back to the copper based blood, and why it's probably not that. Iron based blood is a bit more efficient at transporting oxygen than copper based blood. Iron is also quite prevalent as an element, given it's very radioactively stable, and abundant in the Earth's crust, and therefore likely to be abundant on other planets too. Same goes for carbon, and oxygen, and well,... aren't we carbon based life forms with iron based blood that breath oxygen? I think we can safely say aliens will follow this chemical make up too.

Being warm blooded, while increasing energy consumption is a bonus, as it makes predator more versatile. It's likely aliens will

be warm blooded.

So will aliens have DNA? Experiments following on from the Miller Urey experiment, which mirrored conditions on a primordial earth, and synthesised various amino acids, went on to synthesise Adenine, one of the building blocks of DNA. The laws of physics (and therefore chemistry) apply equally to other planets, so chemical affinities will be the same, so aliens could well have DNA.

The article mentions silicon based life, ... this has been mooted, given silicon is quite similar to carbon, and again, is a very prevalent element (so why don't we see silicon based life forms on Earth?) silicon can make long chain molecules, bond with oxygen and release it, but, when carbon is oxidised for energy (say, when we metabolise sugars) the carbon part becomes carbon dioxide, a gas we can exhale. Silicon dioxide is sand,..... so a silicon based life form would struggle to excrete if it's diet were also silicon based (I'm assuming it would be, as our diet is carbon based, like us).

On breathing Nitrogen, I think that would turn metabolic processed on their head? We take in oxygen and use it to oxidise carbohydrates for energy. Nitrogen is pretty inert, so would the 'food' be the oxidising agent, and inhaled nitrogen become the source of calories? Some explanation of the chemistry, instead of a throw away line might have been nice.

So again, this is a pretty terrible article at the Indy, yet again proving how inept the coverage of science is.

Reply Share 1 reply 0 likes

**Shropshirelad** 12 minutes ago

Would aliens that look like us have all the faults that Humans have as a result of Evolution ,for example the optic nerve passing in front of the eyeball .

Reply Share 0 likes

**Hergé** 3 hours ago

Wait and see!