

# New Scientist

WEEKLY May 29 – June 4, 2021

## HOW TO BECOME MORE MOTIVATED

*Why some people have so much get-up-and-go – and what to do if you don't*

## REVERSING BLINDNESS

Gene therapy restores vision in first successful trial



# THE QUANTUM INTERNET IS COMING

Inside the race to build a completely unhackable online world

## VACCINATING THE PLANET

Push to reach 30% of every nation by the year's end

**PLUS** JAPAN BETS BIG ON HYDROGEN / **ROBOT THUMB** / **SUN STORM DANGER IN SPACE** / LARGEST DRAWING EVER

Science and technology news [www.newscientist.com](http://www.newscientist.com)

No3336 US\$6.99 CAN\$9.99



## Animal behaviour

### Birds know to hide from predators before they hatch

Jake Buehler

THE world is a dangerous place for young birds, and it seems that even as embryos, some take measures to hide from predators.

Late in embryonic development, many bird species will communicate with their parents through the eggshell by chirping. Kristal Kostoglou at Deakin University in Melbourne, Australia, wanted to know if these talkative embryos have the predator-avoiding instincts of hatched chicks, which hide and fall silent when threatened.

Kostoglou and her team exposed the eggs of two Australian shorebird species – 56 eggs of the red-capped plover (*Charadrius ruficapillus*) and 299 of the masked lapwing (*Vanellus miles*) – to different signals of a predator approaching. These included predator calls, increased parent heart rate sounds or changes in light levels resulting

**“Many bird species will communicate with their parents through the eggshell by chirping”**

from a parent bird moving off the nest. The team then recorded how often the embryos called under these conditions.

The researchers didn't find any effects from a change in light or heart rate, but the embryos of lapwings went from calling just over once per minute under white noise, to once over 3 minutes when exposed to the sounds of egg-eating little ravens (*Corvus mellori*), suggesting they were trying to avoid predators. The plovers' call rate was about four times per minute under white noise, but dropped to twice per minute with the predator noises (*International Journal of Avian Science*, doi.org/gjw792).

Jose Noguera at the University of Vigo in Spain says these findings “clearly show that embryos are not passive agents to external cues”. ■

## Analysis Space exploration

### More people are going to space, but who will get to fly?

Civilians in orbit will generally have to be rich, young and physically fit, says Leah Crane



FELIX KUNZE/BLUE ORIGIN

SPACE isn't just for the professionals now several high-profile rocket-makers are gearing up to send civilians above the atmosphere. But with price tags in the millions, we are still far from the long-awaited democratisation of space flight.

Many of these civilian space flight opportunities are being run as contests, auctions or raffles. Blue Origin is auctioning off a seat aboard its very first crewed flight on the New Shepard suborbital rocket – as of 24 May, the price had reached \$2.8 million.

SpaceX's Inspiration4 mission, planned to launch into orbit on 15 September, has an all-civilian crew, with one member selected by raffle and another by a competition. Meanwhile, the Discovery TV channel has announced a programme called *Who Wants to Be an Astronaut?* in which the winning contestant will go to the International Space Station (ISS), and there are plans for scenes from two films to be shot there in September, one starring Tom Cruise and another titled *Challenge* with Russian actor Yulia Peresild.

Then, in December, Japanese billionaire Yusaku Maezawa plans to take a Russian Soyuz rocket to the ISS for 12 days, along with

his production assistant. He has already announced plans to fly around the moon on one of SpaceX's next-generation rockets in a flight currently set for 2023 and is running a contest for eight artists to join him.

This kind of space tourism isn't new: in the early 2000s, seven individuals who weren't professional astronauts flew to the ISS aboard Soyuz spacecraft. This ceased when the US Space Shuttle programme ended in 2011 because at that point Soyuz became the only way to get to the ISS. Now SpaceX has a craft that can bring humans to the ISS, and Boeing is working on another

**Japanese billionaire Yusaku Maezawa has booked multiple trips to space**



REUTERS/KIM KYUNG-HOON

**Blue Origin is auctioning off a seat on its first crewed flight**

one. With more ways to get to space comes the possibility to launch a larger variety of people – but who, exactly?

While the costs of most of these flights haven't been released, the going rate is around \$50 million, so the majority of us will still only be able to experience space flight through a screen, unless we get very lucky in a competition.

And money isn't the only barrier to orbit. When the Russian space agency was looking for a female actor to be in *Challenge*, it sought someone between the ages of 25 and 40, weighing 50 to 70 kilograms and physically fit. She will have to undergo some of the training that government-employed astronauts go through, including centrifuge testing and training on parabolic flights.

The same is true of all the other non-government folk heading to space, even if they aren't going all the way into orbit. The Blue Origin suborbital flight carries requirements for height, weight, physical fitness and dexterity, along with the ability to speak and listen to instructions in English.

There are programmes looking to broaden the range of people who can go to space. For example, the European Space Agency is running a “parastronaut feasibility project” studying adaptations to send individuals with physical disabilities to space. The project website says: “Right now we are at step zero. The door is closed to persons living with disabilities.” Getting to a point where any member of the public can go to space will take work – and it remains to be seen whether private space flight companies are willing to put in the effort. ■