

New Scientist

WEEKLY July 2-8, 2022

THE HIGGS AT 10
What next for particle physics?

BIGGEST BACTERIA
Microbes that can be seen by the naked eye

ORIGIN OF CIVILIZATION
Did warfare lead to complex societies?



THE *longevity* DIET

How knowing what to eat (and when) can help you stay young

PLUS END OF ROE V WADE /
BATTLE TO STOP MONKEYPOX /
HOW BAD IS YOUR PASSWORD?

Science and technology news www.newscientist.com

No3393 US\$6.99 CAN\$9.99



Coronavirus

Bad candle reviews could help track covid-19 cases

Chris Stokel-Walker

NEGATIVE Amazon reviews of scented candles may indicate the number of covid-19 cases in the community and could even predict infection spikes.

Viral Twitter posts have suggested that Amazon reviews for highly scented products could highlight the extent in the population of anosmia, or a loss of smell, a key covid-19 symptom. To learn more, Nick Beauchamp at Northeastern University, Massachusetts, and his colleagues analysed 9837 Amazon reviews of four best-selling scented candles produced by the brand Yankee Candle. All were posted between September 2018 and December 2021.

They noted the number of reviews that said the candles had no smell and compared them with reported covid-19 cases in the US.

The research “started out as a joke”, says Beauchamp, however, the team found a link between covid-19 cases and negative candle reviews. For every 100,000 new covid-19 cases a week in the US over the study period, the number of Yankee Candle reviews saying the product had no smell went up by 0.25 percentage points. A statistical analysis revealed this link wasn’t a chance finding.

The connection also persisted despite the study covering the beginning of the omicron wave in the US, spanning December 2021 to February 2022. Omicron causes anosmia less commonly compared with previous coronavirus variants. The link also still stood after the researchers accounted for other seasonal illnesses that can affect smell. The team presented the work at the International AAAI Conference on Web and Social Media in June.

Monitoring scented candle reviews could track covid-19 cases as regular testing winds down worldwide, says Beauchamp. ■

Space

UK plans launch of spacecraft to grab two dead satellites

Jonathan O’Callaghan

THE UK is committing £5 million to fund a mission to remove space junk. The project will aim to bring two defunct satellites back through Earth’s atmosphere later this decade – a first-of-its-kind feat.

Speaking on 23 June at the Secure World Foundation’s Summit for Space Sustainability in London, UK science minister George Freeman outlined a commitment to keeping Earth’s orbit clean and tidy as part of the UK’s Plan for Space Sustainability. This includes drawing up regulatory norms for the operation of satellites and lowering insurance costs for sustainable missions.

“We’re at the cusp of a massive explosion of satellites,” said Freeman. “We want to make sure we lead in the science of sustainability.”

The UK’s Active Debris Removal mission, first announced last year, will see a spacecraft launched into orbit in 2026. Once there, it will journey to two dead UK satellites orbiting our planet and pull them back into the atmosphere so they burn up,

proving that a single spacecraft can remove more than one piece of debris.

“Removing multiple pieces of debris with a single vehicle is the right way to go,” says Hugh Lewis at the University of Southampton, UK. More than 30,000 pieces of debris in Earth’s orbit are tracked today, including some 2500 dead satellites.

30,000
More than this many bits of space junk are being tracked

Current debris removal plans, such as an upcoming mission by Swiss company ClearSpace in 2025, funded by the European Space Agency, are focused on removing just one piece of debris. The UK’s mission will be the first to target multiple pieces, with the removal spacecraft designed to be left in Earth orbit, possibly for future refuelling to tackle more junk.

Three companies are vying for the contract: ClearSpace, Japanese-UK company Astroscale and UK-based Surrey

Satellite Technology (SSTL). Two will be selected to share the £5 million fund in July, then a single firm will be picked by the end of 2023 with a contract worth up to £60 million.

“Space debris is a huge problem,” said Freeman. “The aim is to make the UK a world leader in satellite retrieval systems.”

Each company has a different proposed method to carry out the mission. Astroscale would use a robotic arm to grab each dead satellite, ClearSpace plans to use four arms to “hug” the objects and pull them down, while SSTL is investigating the possibility of using a giant net to grab one, pulling the other down with an arm.

The two defunct UK satellites have yet to be chosen from more than a dozen targets.

While there are no major legal hurdles to a country targeting its own satellites, there are mission issues that will need to be cleared with the Civil Aviation Authority in the UK, says Joanne Wheeler, a lawyer at London-based firm Alden Legal. “What happens if you go up there and attach to the wrong object?” she asks, saying it could be a national security issue.

The hope is that the scheme will spur more commercial debris-removal missions. “We’re trying to speed up the development of these technologies,” says Jacob Geer at the UK Space Agency. “We’re sending one satellite to remove two objects. There’s a net loss in the amount of objects in space. It’s an important step for everyone, not just the UK.” ■

Artist’s impression of ClearSpace’s satellite-grabbing craft



CLEARSPACE