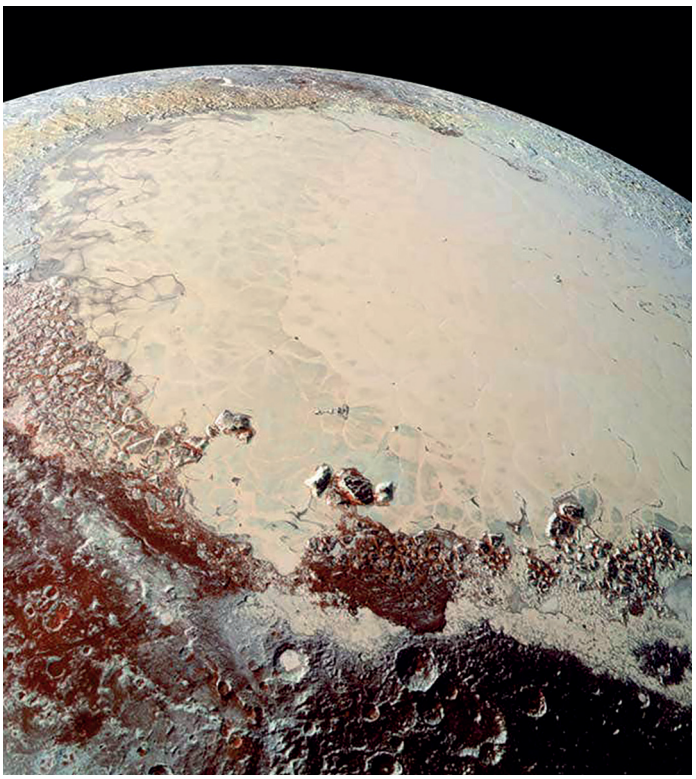

NASA/JHUAPL/SWRI

Solar system

Pluto left red-faced by a leak of ammonia

NASA's New Horizons spacecraft spotted the signatures of ammonia in ice on the surface of Pluto, and it might be responsible for turning parts of its surface red.

Ammonia doesn't last long in space: it is easily broken up by ultraviolet light, charged particles from the sun and cosmic rays from elsewhere in the galaxy.

"The fact that we see it exposed on the surface means that it was put there recently," says New Horizons team member Dale Cruikshank at NASA's Ames Research Center in California. "I don't mean last Thursday, but maybe 100 million years ago."

The team spotted the ammonia in a region called Virgil Fossae, spread over an area about 200 metres wide. Virgil Fossae contains deep troughs and water ice, which could be oozing up from a possible subsurface ocean. Ammonia lowers the melting point of water, so it may keep that ocean from freezing.

Because the ammonia is spread over such a large area, it probably emerged in fountains of ice particles as well as by oozing, says Cruikshank. His team calculated that this must have taken place at most one billion years ago for the ammonia to still be detectable (*Science Advances*, doi.org/c6kk).

The compound could be an important part of the molecules thought to litter Pluto's surface, turning it red in places.

Finding ammonia on the surface could be a hint of more complex organic chemistry on Pluto, too, although it is so cold that there is almost definitely no life there. **Leah Crane**

Conservation

Elephant poaching falls, but not enough

THE number of African elephants being slaughtered by poachers annually has more than halved, with the decline linked to waning demand in China for illegal ivory.

A desire for illegal wildlife products in South-East Asia saw poaching surge. In 2011, mortality rates hit 10 per cent of Africa's elephant population.

But rates dropped to about 4 per cent by 2017, or 15,000 elephants killed a year, an analysis of 53 sites across Africa has found. The fall is correlated with a drop in demand, with the legal trade in mammoth ivory in China used as an indicator of illegal ivory trade (*Nature Communications*, doi.org/c6kb).

"It is good news that the poaching rate is coming down. I don't think they've come down enough," says Colin Beale at the University of York, UK, a co-author of the study.

Elephant populations can grow at about 5 per cent a year. But Beale says a 4 per cent mortality rate from poaching is still too high for numbers to be sustainable, because elephants can also die from drought or being killed by predators, for example.

Ofir Drori of the Eagle Network, which helps African governments with law enforcement, says this "desktop data" contrasts with his experience. "From fighting the trafficking networks on the ground, I can say we see no signs of decline whatsoever, and rather a continued increase in levels of ivory trafficking."

The reported Africa-wide fall in poaching masks big regional variations. The analysis found a link between corruption and poverty and increased poaching. So better governance may help in the short term, says Beale, but "ultimately the only way we are going to stop poaching in Africa is by stopping demand in South-East Asia". **Adam Vaughan**

Wearable tech

Smart gloves know what you are holding

ASK a robot to pick up an egg rather than a bowling ball, and it may not know how to adjust its grip to avoid smashing it. Now a smart glove allows a neural network to learn the shape and weight of an object using sensors. It could be useful for robots in factories or homes, and may even teach us about our own grip.

"It's hard to imagine a robot loading a dishwasher, but this kind of technology could transform things like that," says Subramanian Sundaram at the Massachusetts Institute of Technology.

SUBRAMANIAN SUNDARAM/MIT

He and his team attached force-sensitive film to the palms and fingers of a knitted glove and stitched a net of 64 conductive silver threads into it. When pressure is applied at the 548 points where they intersect, the electrical resistance of the film decreases, letting the glove detect the weight and shape of an object you are holding, as well as the pressure created as your hand moves (*Nature*, doi.org/c6kf).

"This data is passed to the neural network that learns to look for patterns," says Sundaram.

His team trained the network on 26 objects including a tennis ball, a small cat statue and a mug. It could detect objects with 89 per cent accuracy. Sundaram would like to test it on more people, to factor in a range of hand sizes or cultural differences in how we, say, hold a coffee cup. **Chelsea Whyte**