

PLANETARY SCIENCE

Titan's electrified dunes

The dunes of Saturn's largest moon, Titan, may be held together by static electricity.

Grains of sand acquire electrostatic charge as they rub against each other, but on Earth this effect is generally negligible because gravity and a high density of heavy silicate particles minimize interactions between the particles. Joshua Méndez Harper at the Georgia Institute of Technology in Atlanta and his colleagues recreated conditions on Titan, which has one-seventh the gravity of Earth and hydrocarbon-based sand. In their lab experiments, the researchers showed that these lighter grains generated electrostatic forces strong enough to clump some of the grains together.

This could explain why sand dunes at Titan's equator seem to grow into the wind.

Nature Geosci. <http://dx.doi.org/10.1038/ngeo2921> (2017)

MOLECULAR BIOLOGY

Drug stalls protein translation

The discovery of a compound that interrupts the production of a specific protein could open up a fresh path to drug discovery.

Cells rely on complex molecular machines called ribosomes to translate the genetic code and make proteins. Robert Dullea at Pfizer Worldwide Research and Development in Cambridge, Massachusetts, Jamie Cate at the University of California, Berkeley, and their colleagues studied a compound that causes ribosomes to stall while producing the protein PCSK9,

which slows the removal of cholesterol from the blood. They found that the compound temporarily stops ribosomes from synthesizing PCSK9 when they encounter a specific protein sequence, and affects the production of only a few other proteins.

Feeding the compound to rats reduced their cholesterol levels. Such ribosome-stalling compounds could be used to inhibit proteins that are difficult to target with other kinds of drugs, the authors say.

PLoS Biol. 15, e2001882 (2017)



CHRISTOPHE COURTEAU/NPL

ANIMAL BEHAVIOUR

Playful call makes parrots merry

Hearing laughter can make people laugh, and it seems that kea parrots react similarly, displaying play behaviour after hearing a particular call from fellow birds. This makes them the first non-mammals known to experience 'contagious' merriment.

Raoul Schwing, now at the University of Vienna, and his colleagues studied kea parrots (*Nestor notabilis*; pictured) in the wild in New Zealand. They played a warbling sound that is made by the birds and associated with

playful behaviour, for five minutes at a time. The researchers found that the animals played more often and for longer periods of time when they heard the warble than when they heard non-play kea calls, the tweets of a local robin or an artificial tone. Play stopped shortly after the sound ceased.

The authors conclude that the call is not a courtship invitation but stimulates playful emotion.

Curr. Biol. 27, R1–R2 (2017)

EVOLUTION

Diet drives primate brain size

Primates' large brains may be due to the animals' diet rather than their social behaviour, challenging a popular theory.

Alex DeCasien and her colleagues at New York University compiled existing data on primate brain and body size, and sorted the species into four dietary categories: omnivores, leaf-eaters, fruit-eaters and those that eat both leaves and fruit.

The primates that ate fruit had significantly larger brains than those that ate just leaves; and the more fruit they ate, the larger was the ratio of their brain size to their body size. The authors think this could be due to a combination of factors — one being the high nutritional content of fruit, another being cognitive adaptations that help the primates to forage for fruit. Such adaptations could allow them, for example, to extract fruit from protective skins.

The team also found no correlation between brain