

GENOMICS

Tomato flavour genes mapped

Tastier tomatoes could be on the menu if breeders reintroduce lost gene variants involved in the production of flavour compounds.

Harry Klee at the University of Florida in Gainesville, Sanwen Huang at the Chinese Academy of Agricultural Sciences in Shenzhen and their team analysed the chemical composition and genetics of 398 tomato cultivars comprising old, modern and wild varieties.

The modern ones produced fewer volatile chemicals that correlate with pleasant flavour. The researchers identified the gene variants needed to make these chemicals and found that many have been lost as breeders have selected for other traits, such as fruit size.

The findings could help breeders to improve the flavour of tomatoes with minimal reductions in yields, the authors say.

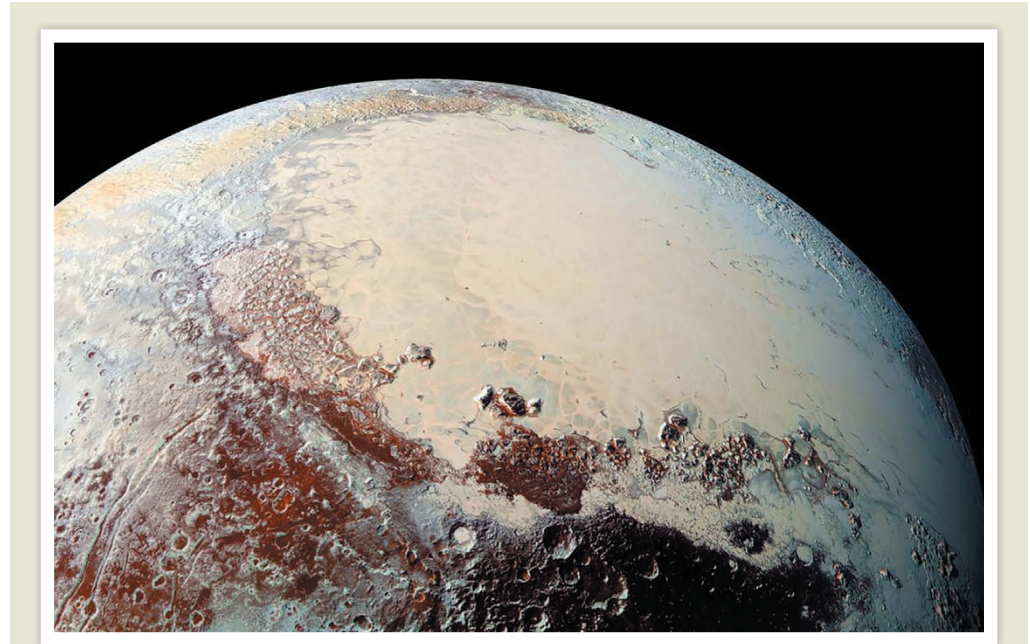
Science 355, 391–394 (2017)

CLIMATE CHANGE

Lasting heavy rains to come

The volume of rain produced by individual storms is projected to rise in the coming years thanks to global warming.

Rainfall is expected to become more intense in a warming world, but how the duration of discrete events might change has not been clear. David Neelin at the University of California, Los Angeles, and his colleagues used a global climate model and statistical theory to analyse how the upper limit of water accumulated in individual rainfall events



PLANETARY SCIENCE

Pluto's dark equator explained

The cosmic impact that formed Pluto's moon Charon several billion years ago may also have created the dark regions seen at Pluto's equator (pictured).

Scientists led by Yasuhito Sekine at the University of Tokyo ran laboratory experiments to see what might happen if a comet rich in organic compounds slammed into the proto-Pluto. Heat from the impact would have warmed liquid water, possibly allowing organic materials in pools of this

water to transform into chemically more complex, darker substances.

Simulations of the Charon-forming impact suggest that it could have heated vast areas in similar locations to those where the dark materials lie today. The work contradicts earlier studies that suggested that the dark material was delivered by comets, or formed over billions of years as solar radiation bombarded Pluto's surface.

Nature Astron. 1, 0031 (2017)

might change in a warming climate. They found that if temperatures rise by 3°C above preindustrial temperatures, the probability of the largest regional precipitation events observed in the past increases as much as tenfold in most regions.

By the end of the century, unprecedented accumulation of rain water could pose a challenge to societies' capacity to adapt to a shifting climate, the authors say.

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<http://doi.org/bxwp> (2017)

MICROBIOLOGY

Salmonella makes hosts eat

Salmonella bacteria can inhibit the loss of appetite that often accompanies bacterial infection, probably to boost the microbe's spread to new hosts.

Janelle Ayres and her team at the Salk Institute for Biological Studies in La Jolla, California, fed mice that had previously been

kept pathogen-free with strains of *Salmonella enterica* serovar Typhimurium (*S. Typhimurium*; pictured). They found that a protein secreted by *S. Typhimurium* during infection, called SlrP, blocks molecular signalling between the gut and the brain by interfering with inflammatory processes. As a result, although the

