

PLANETARY SCIENCE

Rings proposed for orbiting rock

An asteroid-sized rock orbiting between Saturn and Uranus may have a system of rings.

Amanda Bosh of the Massachusetts Institute of Technology in Cambridge and her team observed the minor planet 2060 Chiron passing in front of a star, using NASA's Infrared Telescope Facility on Mauna Kea and the Las Cumbres Observatory Global Telescope Network on Haleakala, both in Hawaii. The team saw two small dips in brightness of the star before and after Chiron's transit, suggesting that a ring of debris surrounds the system — perhaps remnants of Chiron's formation or material ejected from its surface in comet-like jets.

If confirmed, Chiron's ring system would be the fifth known in the Solar System. *Icarus* 252, 271–276 (2015)

MATERIALS

Speedy 3D printing in minutes

Researchers have sped up one approach to three-dimensional (3D) printing so that objects are produced in minutes instead of hours.

One method of 3D printing involves shining ultraviolet rays up into a bath of liquid resin. The light solidifies the resin and the partial product is pulled upwards one notch at a time, which can take up to a day. Now Joseph DeSimone at the University of North Carolina at Chapel Hill and his colleagues have modified this process to make it continuous.

They made the bottom of the resin container permeable to oxygen, which stops the resin solidifying, creating a thin liquid layer just below the area where the solidification

CARBON3D



reaction happens. Because liquid is always present, the researchers can continuously pull up the forming object (example pictured), rather than waiting for new liquid resin to flow in.

Science 347, 1349–1352 (2015)

MEDICAL MICROBIOLOGY

Super bacteria lurk in the home

Drug-resistant bacteria may hide out in homes for many years before causing disease.

In the 1990s, methicillin-resistant *Staphylococcus aureus* (MRSA) moved out of hospitals in North America and started circulating in the community, causing skin and other infections. A team led by Michael David at the University of Chicago in Illinois and Timothy Read at Emory University in Atlanta, Georgia, sequenced the genomes of MRSA taken from 146 patients and members of their households. An evolutionary analysis that compared the sequence of a patient's strain with the one from their home determined that MRSA had been present in the household for between 2.3 and 8.3 years before being sampled.

Eradicating MRSA from homes, such as by treating asymptomatic household members, could help to bring the current epidemic under control, the authors say.

mBio 6, e00054 (2015)

ECOLOGY

Snakes wipe out Everglades rabbits

Invasive pythons have been blamed for the decline of many mammals in a protected area in Florida. Now, Robert McCleery of the University of Florida in Gainesville and his team have found evidence for that claim.

Burmese pythons (*Python molurus bivittatus*) invaded Florida's iconic Everglades National Park several decades ago. To

SOCIAL SELECTION

Popular articles on social media

A proposal to cure sloppy science

A debate this week on ways to improve the practice of science quickly spread to social media. The event at University College London, called 'Is science broken? If so, how can we fix it?', included claims that some dubious laboratory practices, such as tweaking statistical analyses to make results seem significant, are widespread (see go.nature.com/4imbij). One suggested solution — requiring scientists to register their experimental design and planned analysis with a journal before running any tests — received general support. Audience member Michael Markie, an associate publisher at the open-science platform *F1000Research*, shared

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his thoughts about preregistration on Twitter: "IMO, registered reports can be applied to all life science subjects. Ideal to get your house in order before publishing."

study the pythons' effects, the researchers focused on marsh rabbits (*Sylvilagus palustris*), which have all but disappeared from the park. They released 26 radio-collared rabbits at two sites and found that Burmese pythons were responsible for 77% of the deaths within 11 months, as confirmed by DNA extracted from partially eaten rabbits or by finding the entire collared animal inside a python's belly.

Outside the pythons' current range, 71% of the rabbit mortalities were linked to mammals, mainly bobcats (*Lynx rufus*) and coyotes (*Canis latrans*).

Proc. R. Soc. B 282, 20150120 (2015)

METEOROLOGY

El Niño brings fewer tornadoes

Warming and cooling trends in the equatorial Pacific Ocean affect the frequency of tornadoes (pictured) in parts of the United States.

John Allen of Columbia University in New York and his colleagues focused on environmental indices (such as wind shear) that are linked to extreme US storms, and analysed their relationship with periodic



warming and cooling events in the tropical Pacific. These events are known as El Niño and La Niña, respectively. The team found that fewer tornadoes and hailstorms occur in winter and spring in the central and southern plains during El Niño, and more occur during La Niña, than in years when temperatures in the Pacific are relatively stable.

Although El Niño and La Niña events tend to be strongest during winter, the authors suggest that ocean conditions could be used to forecast extreme spring storm events several months in advance.

Nature Geosci. <http://doi.org/243> (2015)

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