ballooning by helping them to survive watery landings.
BMC Evol. Biol. 15, **118 (2015)**

PLANT SCIENCE

A gene for evening scents

Petunias release their scent following the daily rhythm of a circadian-clock gene.

Takato Imaizumi of the University of Washington in Seattle and his colleagues identified a gene that they call *PhLHY* in the fragrant flower *Petunia hybrida*, which releases volatile scent molecules primarily at night.

This gene is typically expressed in the morning, dampening the expression of other genes and the production of enzymes involved in producing scent molecules.

Plants engineered to constantly express PhLHY stop producing scent molecules entirely. By contrast, plants in which this gene's expression is reduced show peak scent production around midday.
Proc. Natl Acad. Sci. USA **http://doi.org/5xg (2015)**

MICHAEL M. PORTER/CLEMSON UNIV.

ASTRONOMY

Event pile-up may explain solar storm

A rare combination of factors might have combined to make a solar storm in March 2015 the strongest seen for a decade.

Like most such storms, this one began when the Sun spurted fast-moving plasma in an event called a coronal mass ejection. A different part of the Sun then sent out a stream of plasma as 'solar wind'. This wind could have pushed the coronal mass ejection from behind, suggests a team led by Ryuho Kataoka at the National Institute of Polar Research in Tokyo. The whole mass could have then ploughed through space, piling up dense particles from earlier blasts of solar wind ahead of it. The Sun's magnetic field lines also happened to be oriented to drive the storm powerfully towards Earth. On hitting Earth's atmosphere, it sparked aurora (**pictured**) around the Northern Hemisphere on 17 March.
Geophys. Res. Lett. **http://doi.org/5wn (2015)**

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CHEMISTRY

A boost for magnetic imaging

Signals from magnetic resonance imaging (MRI) can be substantially enhanced by 'hyperpolarizing' nuclear spins.

Nuclear magnetic resonance and MRI rely on powerful magnets to align the nuclear spins of protons in atoms, which then emit radio signals on returning to their normal states. These signals can be recorded to produce images or provide information on chemical composition.

Neal Kalechofsky at Millikelvin Technologies in Braintree, Massachusetts, James Kempf at Bruker Biospin Corporation in Billerica, Massachusetts, and their colleagues at these lab-equipment companies demonstrate a way to boost signals from an isotope of carbon used in medical imaging by around 1,600-fold. Their 'brute-force' approach uses low temperatures and high magnetic fields to align the spins of more atoms in a sample at 2.3 kelvin and 14 tesla than is usually possible for MRI. Samples are then ejected from the low-temperature environment, dissolved and finally transferred for imaging at room temperature and 1 tesla, providing better signals.
J. Am. Chem. Soc. **http://doi.org/5x8 (2015)**

SOCIAL SELECTION

Popular topics on social media

Publishing delays raise hackles

While waiting for his paper to be published, Daniel Himmelstein, a PhD student in biological and medical informatics at the University of California, San Francisco, compiled the median time between acceptance and publication for 3,476 journals. He found that the wait ranged from 3 to more than 100 days.

Long delays are common, he noted on his blog. Among 16 journals in his field, *PLoS Computational Biology* was the worst, with a median wait time of 57 days. *PLoS Genetics* was not far behind. (*Nature*'s median wait was almost 48 days.)

The blog post caused a stir on social media. "Wow, @PLOSCompBiol and @PLOSgenetics take their sweet time getting papers published," tweeted Claus Wilke, an integrative biologist at the University of Texas at Austin. David Knutson, a spokesperson for the journals' publisher the Public Library of Science, says that producing high-quality papers takes time, but that the publisher has a "laser focus" on reducing delays.

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VIROLOGY

Mapping viral disease vectors

The mosquitoes that carry the dengue and chikungunya viruses are more widespread than ever before, and are likely to increase their ranges.

Simon Hay at the University of Oxford, UK, and his team compiled more than 40,000 records of the occurrence of the mosquitoes *Aedes aegypti* and *Aedes albopictus*. They combined this with environmental data to map the current and possible range of these insects at a 5×5-kilometre scale.

These two *Aedes* species are found widely in all continents except Antarctica, but are still not reported in habitat that is potentially suitable for them. The team's maps could direct surveillance of these mosquitoes in understudied areas.
eLife **http://doi.org/5tz (2015)**

BIOMECHANICS

Seahorses benefit from square tails

The unusual square tails of seahorses both help the animals' grasping ability and increase their toughness.

Seahorses use their bone-armour-plated tails to grip the corals and plants in which they hide, but, unlike most animal tails, the cross-section of theirs is square rather than circular. Michael Porter at Clemson University, South Carolina, and his team printed 3D articulated models of both square and circular tails and tested them under various conditions. Although the twisting ability of the cylindrical model was greater, the square prism structure provided the tail with more contact area for gripping objects and assisted the tail in relaxation, which could reduce the amount of energy a seahorse expends on grasping.

The square tail was also three times stiffer and four times stronger when compressed.
Science **http://doi.org/5z9 (2015)**

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