

RESEARCH HIGHLIGHTS

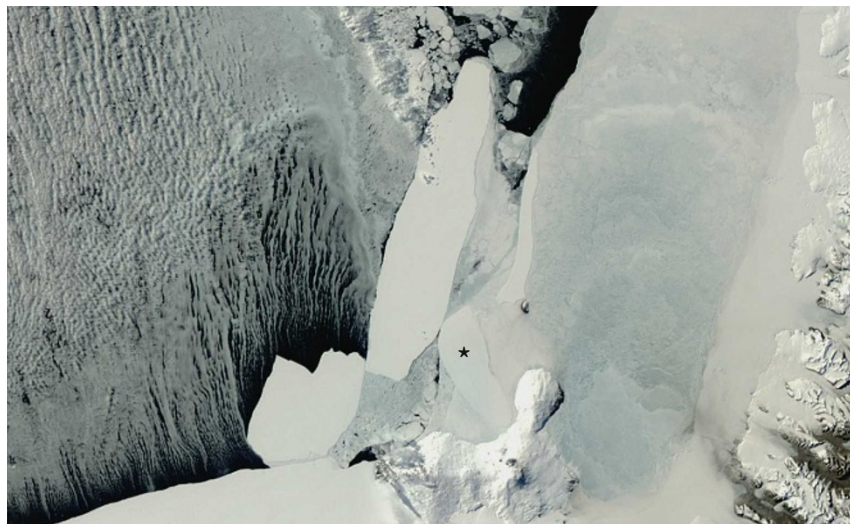
Iceberg smash-up

J. Geophys. Res. doi:10.1029/2008JF001005 (2008)

When icebergs collide, they create seismic tremors that are detectable thousands of kilometres away and might one day be used to track the disintegration of ice shelves.

Douglas MacAyeal of the University of Chicago in Illinois and his colleagues placed four seismometers on a 50-kilometre-long iceberg (marked with an asterisk) that sits aground in the Ross Sea, off Antarctica. Over several weeks, they recorded many series of tremors, which they attribute to an adrift neighbouring iceberg (pictured centre) grating against the stationary one. Each series contained thousands of ice-quakes per hour.

The tremors share some similarities — but are distinct enough not to be confused — with recently discovered tremors that emanate from subduction zones and from the San Andreas fault.



D. MACAYEAL/MODIS/NASA

COMPARATIVE BIOLOGY

Animal models

Proc. R. Soc. B doi:10.1098/rspb.2008.0506 (2008)

The hierarchy of stages involved as blood stem cells develop into the various blood-cell types does not differ significantly across all species of mammal. But the rate at which these stem cells multiply does; it is faster the smaller a typical adult's mass.

This finding from David Dingli of the Mayo Clinic in Rochester, Minnesota, and his colleagues confirms that mammals used in experiments make accurate models of the human blood-cell-production process.

Dingli and his co-workers reached their conclusions after building a model of many aspects of blood-cell production across many species of mammal. They compared this with the limited experimental data available.

PLANETARY SCIENCE

Soft metals

Proc. Natl Acad. Sci. USA doi:10.1073/pnas.0804609105 (2008)

Metallic helium isn't as hard to make as scientists thought, according to Lars Stixrude of University College London and Raymond Jeanloz of the University of California, Berkeley. They calculate that the amount of squeezing needed to make the element conduct electricity is smaller when helium is hot than when it is cold; squeezing at close to 30 million atmospheres turns helium metallic at a 'mere' 20,000 kelvin.

This means that metallic helium should mix quite readily with metallic hydrogen in the fluid interiors of Jupiter and Saturn, where these conditions

are probably reached. That squelches the idea that a layer of liquid, and therefore electrically insulating, helium, floating immiscibly on metallic hydrogen, could produce helium rain in these planets' dense atmospheres.

CLIMATOLOGY

Winter sun

Geophys. Res. Lett. doi:10.1029/2008GL034160 (2008)

The weekly weather cycles detected in some big cities have been linked to higher levels of vehicle exhaust and factory emissions on weekdays than at weekends. But researchers have now found that this effect acts over a much larger area than urban centres.

Arturo Sanchez-Lorenzo from the University of Barcelona and his colleagues examined 44 years of climate data from 13 weather stations across Spain. They discovered that winter weekends tend to be drier and sunnier than weekdays. The result held for both urban and rural areas, suggesting that the hebdomadal cycles are caused by pollution's effect on regional atmospheric circulation

rather than dirty particles nucleating raindrops close to the source of smog.

The authors observed the same relationship across Western Europe, and the reverse — wetter weekends — in the eastern North Atlantic.

ASTROPHYSICS

Slow-motion supernovae

Astrophys. J. **682**, 724–736 (2008)

A survey of exploding stars shows that the farther away they are, the slower they seem to blow apart, as predicted on the basis of general relativity. The supernovae studied are known as type Ia supernovae, and are important for gauging the strength of dark energy — a mysterious force that seems to be pushing the Universe apart. These findings reassure astronomers that the far away supernovae behave like those nearby.

Stéphane Blondin at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, and his colleagues studied thirteen supernovae between 3.6 and 7.5 billion light years

from Earth. The group compared several spectra from the more distant supernovae with those of nearer ones and found that the more distant explosions took longer to unfold.

ZOOLOGY

Predatory Lotharios

J. Fish Biol. **73**, 728–731 (2008)

When mothers warn their daughters that boys are after only one thing, a meal probably isn't what they have in mind. However, male fish of one species have been observed enticing females of



BLICKWINKEL/ALAMY