

RESEARCH HIGHLIGHTS

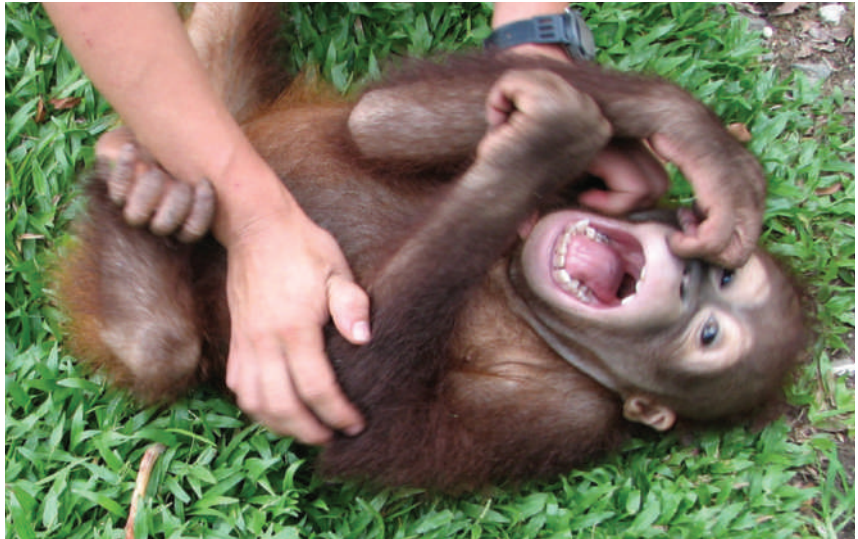
Tickle tree

Curr. Biol. doi:10.1016/j.cub.2009.05.028 (2009)

A study of recordings made while researchers tickled infant humans and juveniles of several species of ape shows that the relationship between different species' laughter closely matches an independent family tree derived from genetic differences.

Biologists have debated whether human laughter, which sounds distinct from that of apes, consists of true innovations, or simply continues evolutionary pathways pioneered by ape-like ancestors. Marina Davila Ross of the University of Portsmouth, UK, and her colleagues conclude from their analysis of the recordings that tickle-induced laughter has a common evolutionary origin in apes and humans. They add that the analysis could have implications for the evolution of human speech.

For a longer story on this research, see <http://tinyurl.com/phh2m9>



M. WESSELS

ASTRONOMY

What's handed down

Astrophys. J. 698, L37–L41 (2009)

In the unusual chemistry of a bright star, researchers have detected the echo of the Universe's first stars, massive but short-lived giants that existed about 13 billion years ago.

BD+44°493 is an extreme example of a star enriched in carbon but depleted in iron, say Hiroko Ito of SOKENDAI, the Graduate University of Advanced Studies in Tokyo, and her colleagues. The high amount of carbon could not have been produced by the star's own fusion synthesis, say the researchers, nor is it likely to have come from a companion star or a previous generation of rapidly spinning stars. They thus surmise that it originated in the turbulent, black-hole-producing supernovae of the Universe's first stars.

ECOLOGY

Evidence of emperors

Glob. Ecol. Biogeogr. doi:10.1111/j.1466-8238.2009.00467.x (2009)

Emperor penguin colonies are hard to locate because they are distributed over huge swathes of sea ice, much of which is present only in the most inhospitable months of the year.

Peter Fretwell and Philip Trathan of the British Antarctic Survey in Cambridge, UK, have found a way to spot breeding colonies without clambering around in the cold; they look at satellite images for the large faecal stains (pictured right) created by the emperors (*Aptenodytes forsteri*).

Their survey has located 38 colonies, including 10 new sites and 6 that were

recorded as being in the wrong place. Six other previously recorded colonies were missing.

PLANETARY SCIENCE

Pressure drop

Proc. Natl Acad. Sci. USA doi:10.1073/pnas.0809436106 (2009)

The Sun is growing brighter with age, and some argue that this will limit the lifespan of Earth's biosphere. The hotter the Sun, the more readily carbon dioxide will be removed from the atmosphere by chemical weathering; once levels fall too low, photosynthesis will cease and the biosphere will be radically diminished.

King-Fai Li and his colleagues at the California Institute of Technology in Pasadena offer a way out of this trap with the help of a simple model. A drop in overall atmospheric pressure, achieved perhaps through biological sequestration of nitrogen, would weaken the atmospheric greenhouse effect. This would

make the world cooler for a given level of CO₂. As a result, the weathering effects would be less marked and CO₂ levels could stay higher for longer. This might extend the biosphere's remaining lifespan from around 1 billion years to something like 2.3 billion years.

The authors conclude that atmospheric pressure is also likely to co-regulate the climate of planets elsewhere in the Universe. If this means that the lifetimes of biospheres are longer in general, it might increase the chances of intelligent life evolving, and the chances that that life coincides with life on Earth.

OCEANOGRAPHY

Glowing oceans

Biogeosciences 6, 779–794 (2009)

Building on earlier research into global assessments of ocean productivity, a team led by Michael Behrenfeld of Oregon State University in Corvallis reports the first satellite-based evidence linking phytoplankton fluorescence to iron stress in surface waters.

Using images collected by the MODIS sensor aboard NASA's Aqua satellite between 2003 and 2007, the team found that high fluorescence levels were highly correlated with low iron levels in surface waters.

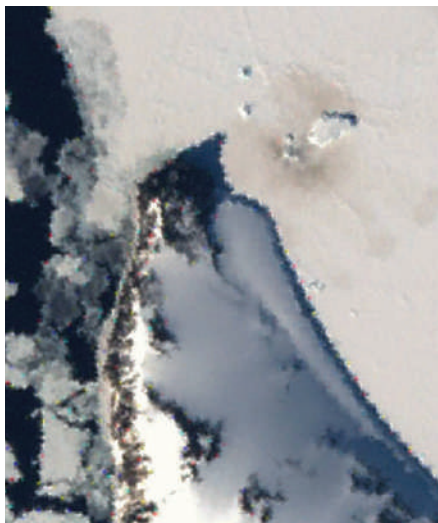
Researchers say the technique could be used to monitor iron stress in phytoplankton and to analyse iron-fertilization experiments.

NEUROGENETICS

Huntington's toxic trigger

Science 324, 1327–1330 (2009)

Uncontrolled movements are symptomatic of Huntington's disease, which is caused by mutation of the huntingtin gene. Mutant



LIMA/USGS