



News Update

04/01/2006

Are Shifts in Earth's Crust Causing New Orleans to Sink?

By Peter N. Spotts – CSM, Mar 31, 2006

Hurricane Katrina's devastating strike on New Orleans last fall highlighted shortcomings in the city's levee system. It also focused attention another long-term problem: The city and the region around it are sinking.

New research suggests, however, that at least for nearby Michoud, La., the dominant driver pulling the region under may not be among the usual suspects: oil extraction, pumping groundwater to the surface, or diverting the Mississippi for navigation.

Instead, the King of Slump may be a deep fault that cuts across southeastern Louisiana and under Michoud. During the 1970s, the fault appears to have contributed from 50 to 73 percent of the subsidence in this section of Orleans parish, depending on the time period measured. If sustained over a century, that would equate to as much as a six-foot sea-level rise, independent of any increase tied to global warming.

"Something dynamic is going on down there," says Roy Dokka, who heads the Center for GeoInformatics at Louisiana State University in Baton Rouge, La. "It doesn't occur everywhere," but it certainly appears to be affecting Orleans parish, he adds.

If these results hold up, they would imply that to build new levees properly, engineers will have to take into account the effects of further slumping along the fault - data hard to come by because the fault is so deep and difficult to study.

The work is controversial. It builds on a study Dr. Dokka and Kurt Shinkle of the National Oceanic and Atmospheric Administration's National Geodetic Survey (NGS) completed in 2004 for NOAA. That study drew on some 2,700 measuring points around southern Louisiana to measure subsidence rates. It yielded far higher sinking rates than other scientists had calculated.

Undaunted, Dokka says he suspected that tectonic forces might account for the difference. So he analyzed measurements from a smaller group of these "benchmarks" that straddle the Michoud Fault. Several benchmarks are associated with water-well casings that reach as deep as 1.2 miles - far below sediment layers that would be affected by removing ground-water in the region or by compaction, Dokka says.

He found that the deepest layer contributed far more to subsidence during the study periods than did intermediate and upper layers of sediment. He attributes the high rates to the fault, which appears to release stress in a creeping "earthquake," rather than in a sudden snap. The results appear in the April edition of *Geology*, a journal of the Geological Society of America.

To Arthur Berman, a petroleum geologist in Houston who has tracked the issue, Dokka's work is solid. His only quibble: The study is using the best available data, but they're from 1988. So they don't reflect what is going on today. Updating the 1988 NGS survey would cost millions of dollars.

Still, he says, he's not surprised by the results. "This is solid geology," he says. "When there are changes, the first thing I would look at is the basin itself."

The next step, Dokka says, is to apply GPS satellite-navigation technology to the problem. As they have elsewhere, he says, GPS receivers should be able to track changes in height and any lateral movement in the land in great detail. This could help apportion the causes of subsidence among the various factors scientists have identified and cover a wider area.

[Source...](#) [more info...](#) [more info](#)



Scores killed as quakes shatter Iran

By Telegraph.co.uk, Apr 1, 2006

Scores of people died and thousands were left homeless after three strong earthquakes hit a mountainous region of western Iran yesterday.

An initial quake registering 4.7 on the Richter scale hit the sparsely populated western province of Lorestan before two stronger quakes rocked the Lorestan cities of Boroujerd and Doroud. Iranian television said 70 bodies had been recovered from homes in the Silakhor region north of Doroud and more than 1,200 people had been treated for injuries. Lorestan's disaster control committee chief said 330 villages had been damaged.

[Source](#)



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The Storm Continues

By NASA, March 29, 2006

The Cassini spacecraft looks toward giant Saturn and its moon Tethys, while a large and powerful storm rages in the planet's southern hemisphere. The storm was observed by the Cassini spacecraft beginning in late Jan. 2006, and was at the time large and bright enough to be seen using modest-sized telescopes on Earth.

The fact that the storm stands out against the subtle banding of Saturn at visible wavelengths suggests that the storm's cloud tops are relatively high in the atmosphere.

Tethys is 1,071 kilometers (665 miles) across.

The image was taken in visible light with the Cassini spacecraft wide-angle camera on Feb. 18, 2006, at a distance of approximately 2.8 million kilometers (1.7 million miles) from Saturn.

The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. The Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, manages the mission for NASA's Science Mission Directorate, Washington, D.C. The Cassini orbiter and its two onboard cameras were designed, developed and assembled at JPL. The imaging operations center is based at the Space Science Institute in Boulder, Colo.

For more information about the Cassini-Huygens mission visit <http://saturn.jpl.nasa.gov> . The Cassini imaging team homepage is at <http://ciclops.org> .

[Source](#)



Global warming linked to cosmic rays

By Tom Spears, CanWest News Service

Mar, 17, 2006

OTTAWA - A prominent University of Ottawa science professor says what we know about global warming is wrong -- that stars, not greenhouse gases, are heating up the Earth.

Jan Veizer says high-energy rays from distant parts of space are smashing into our atmosphere in ways that make our planet go through warm and cool cycles.

The retired professor (he still holds a research chair and supervises grad students and post-doctoral fellows) knows that to challenge the accepted climate-change theory can lead to a nasty fight. It's a politically and economically loaded topic. Yet, he is speaking out -- a bit nervously -- about his published research.

"Look, maybe I'm wrong," he said in an interview. "But I'm saying, at least let's look at this and discuss it."

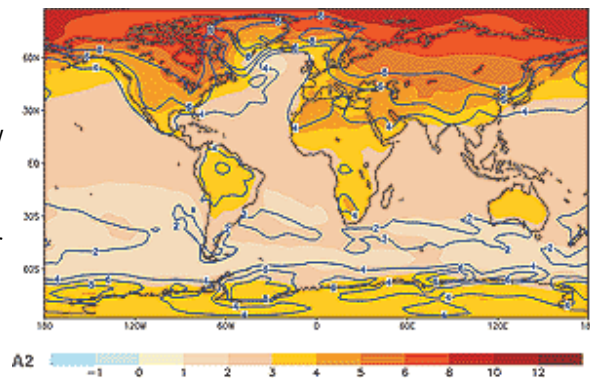
High-energy cosmic rays are hitting us all the time. This has been known for a long time. What's new is that a variety of researchers are asking what cosmic rays do to our world and its weather.

That includes a theory published last year by the Proceedings of the Royal Society arguing cosmic rays "unambiguously" form clouds and affect our climate.

Prof. Veizer is a leader in geochemistry -- learning about Earth's past by the chemistry preserved in rocks and sediments. The Royal Society of Canada called him "one of the most creative, innovative and productive geoscientists of our times."

He won the 1992 Gottfried Wilhelm Leibniz Prize, worth \$2.2-million, the German government's highest prize for research in any field.

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Global warming linked to cosmic rays (cont.)

Yet, for years he held back on his climate doubts. "I was scared," he said. And he still is.

Still, he has published his theory in Geoscience Canada, the journal of the Geological Association of Canada. The article is called "Celestial Climate Driver: A Perspective from Four Billion Years of the Carbon Cycle."

In his paper, he concludes: "Empirical observations on all time scales point to celestial phenomena as the principal driver of climate, with greenhouse gases acting only as potential amplifiers."

The majority of climate scientists still firmly believe that greenhouse gases are to blame.

But Prof. Veizer felt uncomfortable with the idea that high levels of carbon dioxide alone are causing hot spells.

He looked to geology. As environmental conditions change, different "isotopes" of some chemicals form. These are slightly different forms of any element -- carbon, or oxygen, or less common substances such as beryllium. And these remain frozen in time in ancient rocks, or lake and ocean sediments, or glaciers. (Samples drilled from Antarctic ice go back more than 700,000 years, layer by layer.)

For Prof. Veizer, the idea is that cosmic rays hit gas molecules in the atmosphere and form the nucleus of what becomes a water vapour droplet. These in turn form clouds, reflecting some of the sun's energy back to space and cooling the Earth.

Yet the numbers of cosmic rays vary. Most come from younger stars, which are clustered at some regions in the galaxy through which our solar system has passed its 4.5-billion-year history. As well, our own sun deflects some of these rays away, but the sun's activity grows stronger and weaker. All these factors can change the number of cosmic rays that hit us.

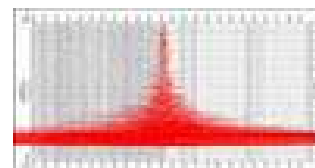
[Source... Veizer's original text](#)

Strong Earthquake In Kermadecs

By Newswire.co.nz

Apr 1, 2006

strong earthquake was recorded this morning in the Kermadec group where a Department of Conservation worker was killed during an eruption on Raoul Island last month.



Five DOC workers had to be evacuated, but Mark Kearney is presumed dead as he was close to the crater lake when it erupted on March 17. A search mission was unable to reach the lake the following week.

The latest quake was recorded just after 1 o'clock this morning.

It measured 6.5 on the Richter scale and was 110 kilometres east of Raoul.

Three DOC workers are currently stationed on the island, but the co-ordinator of volcano surveillance at the Institute of Geological and Nuclear Sciences, Brad Scott, says strong earthquakes are normal for the region.

He said there was no indication that the volcano on Raoul Island was affected.

[Source](#)