

# Inner Core Of the Earth Spins Faster

Scientists say discovery  
could aid quake research

By K.C. Cole  
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In what is being hailed as a new window on the inner workings of the Earth, scientists viewed for the first time our planet's rotating core, a glimpse they say should open up new vistas into realms previously accessible only in theory and science fiction.

"It curls your toes that they could do this," said University of Santa Cruz seismologist Thorne Lay.

The new view of the Earth's core could, among other things, help researchers understand why North and South magnetic poles of the Earth wander about on the surface, and completely change places every 100,000 years or so.

"We didn't think this was something we could ever hope to measure," said Paul Richards of Columbia University's Lamont-Doherty Earth Observatory, co-author of the paper that was published yesterday in the journal *Nature*.

## Sonogram of the Inner Earth

By tracking the arrival times of waves from 38 earthquakes that rumbled through the Earth between 1967 and 1995, the researchers created what amounts to a sonogram of the inner Earth, similar to medical sonograms used to see inside the human body. Because the speed of waves varies according to the properties of the material it traverses, the scientists were able to create an image of the core.

They said the precise techniques they used to reach their finding about the inner core would also help seismologists better understand earthquakes.

Richards and colleague Xiaodong Song discovered that the moon-size core of the Earth spins slightly faster than the Earth's crust, but 100,000 times faster than the continents that drift about on its surface.

Confirming these results, a paper soon to be published by University of California at Berkeley geophysicist Raymond Jeanloz and colleagues at Harvard got almost exactly the same results using different methods.

"We were totally unaware that they were working on this, and vice-versa, until a few months ago," said Jeanloz. "I think we're all amazed."

