

Vast 'ocean' found deep inside Earth

STILL waters run deep. A reservoir of water three times the volume of the world's oceans has been found towards Earth's core. It could explain where the seas came from.

The water is hidden in a blue rock called ringwoodite that lies 700 kilometres down in the mantle, between Earth's surface and core.

Steven Jacobsen of Northwestern University in Evanston, Illinois, and colleagues used seismometers to study the seismic waves from more than 500 earthquakes. By measuring the speed of the waves at different depths, the team could determine which types of rocks they passed through. The water layer revealed itself because the waves slowed down - it takes them longer to get through soggy rock than dry (*Science*, doi.org/s66).

The finding supports a recent study by Graham Pearson of the University of Alberta in Edmonton, Canada. He studied a diamond from the transition zone, between the upper and lower mantle, that was carried to the surface via a volcano, and found that it held water-bearing ringwoodite (*Nature*, doi.org/s6h).

The reservoir throws light on the origin of Earth's water. Some geologists think it arrived in comets, but the new finding suggests the oceans oozed out of Earth's interior.

"It's good evidence Earth's water came from within," says Jacobsen.