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## Hunt is on for world's deepest caves more than 2km underground

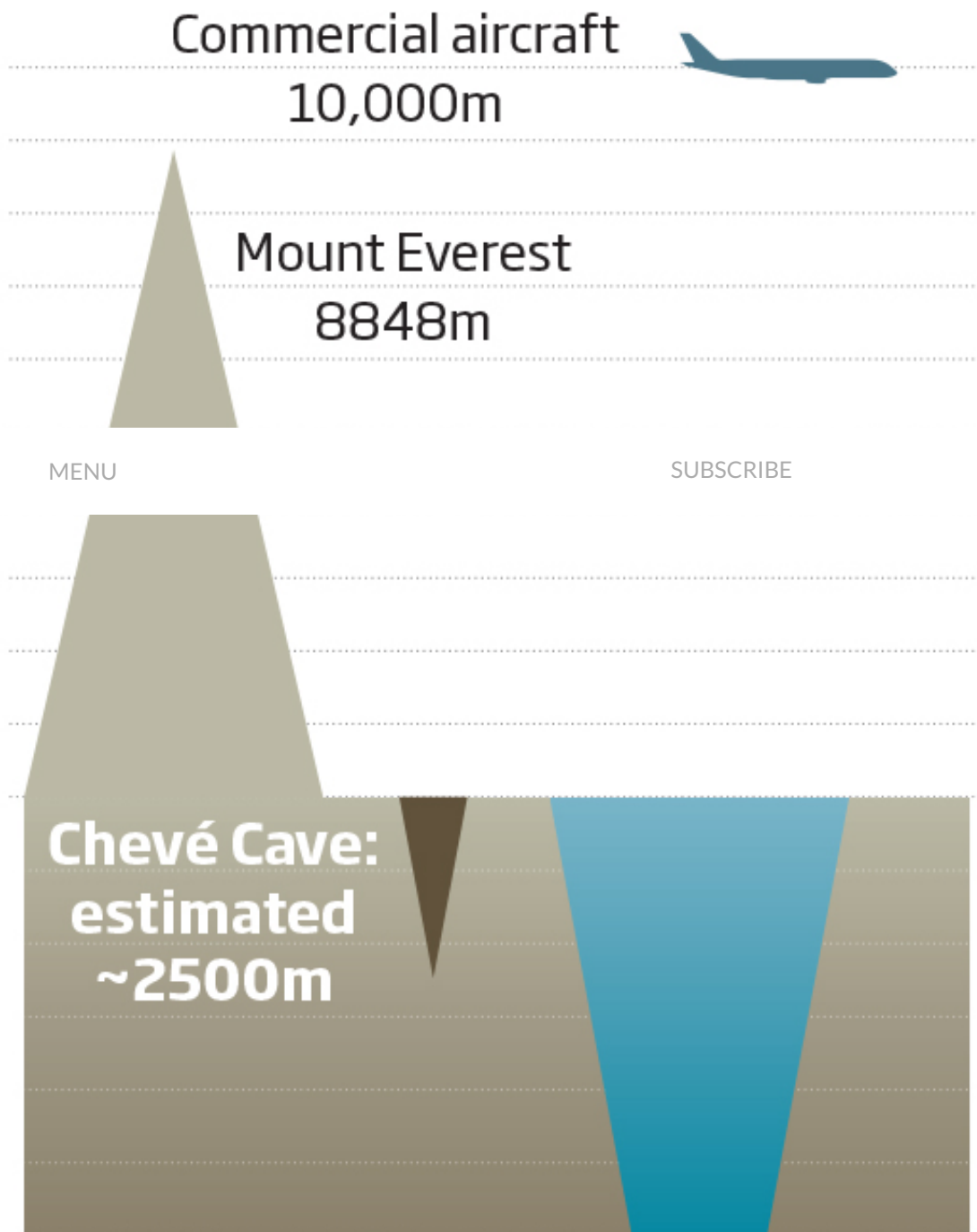


HOW low can you go? Dedicated deep cavers plumb the depths for an answer, and a newly announced expedition may just get to the bottom of it all.

For decades, cavers have competed informally to find the world's deepest cave, pushing the boundaries of science along the way. It's a perpetual quest – they can never truly know if they have found the absolute deepest. Bragging rights have bounced from cave to cave, but since 2004 the record has been **2191 metres**, held by the Krubera Cave in the western Caucasus mountains, which is also home to the world's **deepest land animal, a springtail**.

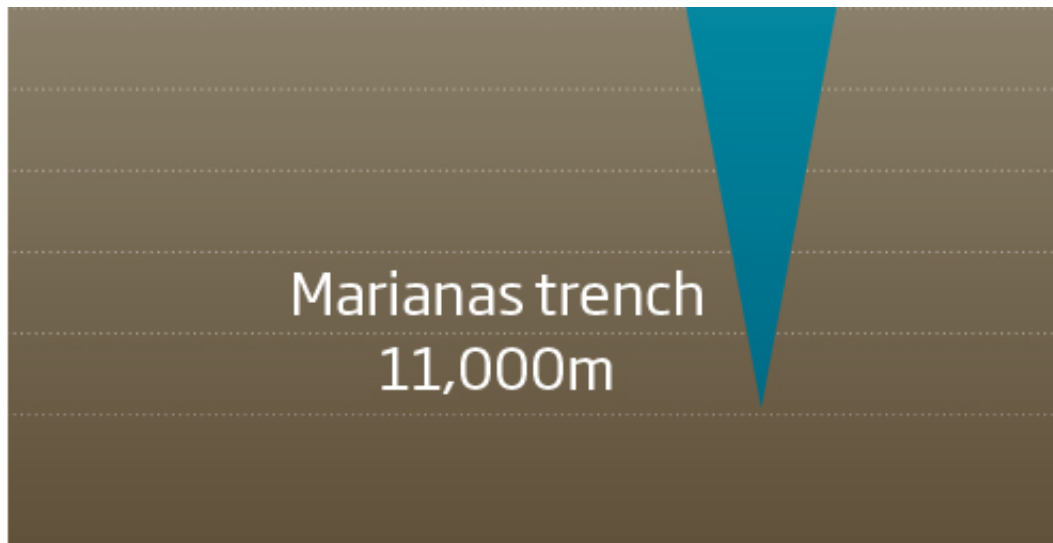
# Planet's extremes

Chevé Cave in Mexico is suspected to be the world's deepest. It is still dwarfed by the tallest mountain and the deepest ocean trench



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But Bill Stone may be about to break the record. The veteran caver and inventor has announced that he is planning a 2017 expedition to the Chevé Cave system, a sprawling supercave in the Oaxaca region of Mexico, whose tortuous tunnels underlie an area twice the size of Manhattan.

It's not just the thrill of breaking records that drives exploration – scientific inquiry also matters. Caves are little-understood but important component of karst aquifers, which provide drinking water to hundreds of millions of people. Their steady climates also make them promising hunting grounds for well-preserved fossils, and mineral deposits can provide records of past changes in climate. For biologists, they promise to reveal new – and often [bizarre – species](#).

“To me, and to most others on the team, Chevé is the world’s most fascinating exploration puzzle,” says Stone. “It’s the last terrestrial frontier.”

Stone isn't alone in thinking Chevé may break the depth record. “It’s still possible that the deepest cave will be in the Americas, even deeper than Krubera,” says Bill Steele, another veteran caver. He is now co-leading a series of expeditions to Sistema Huautla, a vast cave system that lies within sight of Chevé, on the opposite side of a canyon carved by the Santo Domingo River. Sistema Huautla is the current deepest cave in North America and drops some 1545 metres from its entrances.

Steele says Chevé has the “proven potential” to capture the title. In 1990, caver James H. Smith, Jr, [dropped 7 kilograms](#) of dye into the water at one of its entrances. The green water emerged in the canyon and spilled into the Santo Domingo after dropping over 2547 metres ([see also diagram](#)). If Stone and his expedition can follow the water, Chevé will beat Krubera.FIG-mg30515101.jpg

But that's a big challenge: while the dye suggests a path exists, it has to be traversed by

people to beat the record. “It doesn’t count if you just send a dye through a cave system... any more than you can say Mount Everest was climbed the first time somebody saw the summit,” says Steele.

Going deep into Chevé is a complex operation for which Stone says he will need between 60 and 70 cavers. His strategy is to look for a route past a boulder collapse that blocked further exploration back in 2003.

The appeal of the unknown and the element of surprise is what keeps Stone and others going. “You can still climb unclimbed peaks in the world, but you can also study them on Google Earth before you go,” says cave diver Zeb Lilly. “You can dive the ocean depths, but those have been mostly mapped by sonar [and] it’s cost-prohibitive to do [deep ocean exploration](#). On a budget, though, you can explore areas underground no one has ever seen.”

And it’s not just depth that matters. Steele and fellow caver Tommy Shifflett have organised a series of annual expeditions to explore horizontal offshoots of the Sistema Huautla that past cavers ignored as they raced to the bottom. This year’s expedition was the second of 10 they have planned.

The expeditions have already turned up new species of tarantulas and scorpions, as well as bones thought to belong to extinct Pleistocene-era mammals, including a bison and a giant ground sloth. “It’s a matter of being thorough, of doing all the various studies that should be done when you’re exploring an area never reached before by humans,” says Steele.

*(Image: Stephen Eginoire)*

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