

VOLCANOLOGIST DANCES ON LAVA

BRITT ARGOW: This is Kilauea, one of the world's most active volcanoes. Volcanologist Dave Sherrod treads on the newest rock on the planet.

DAVE SHERROD: We're standing here on lava flows, and that's a type of rock we'd call an igneous rock. Igneous meaning, originally in the Greek sense, fire, molten. These are rocks that have their origin through melting of some part of the Earth's materials. Now, they're lava flows, and as that very name implies, they're wanting to go somewhere, they're moving out over the surface. They're uncomfortable here because they're so hot and the air is so cool, but they start to chill immediately. The orange incandescence tells us that they're red hot. The black tells us that the atmosphere is already dictating its commands that they cool. I could walk over right now and put my foot on this with my full weight, virtually a couple minutes old. And where I'm going to stand depends on how hot it is. This has already got a bit of a crust. Okay, this lava was being in placed about a minute ago. You can see my shoes are starting to smoke as I bounce across it. This is still red hot; I can't get the crust to come down. Here's one... whoa, that smoked my shoes. And this one will ignite my shoes. But you can see the plastic imprint of my boot. I'll do it once more. Vibram lug is in there, but the pressure tends to push that flow right back out. Now, we know some things about lava. If it's incandescent, if it's orange, it's hotter than 500 degrees Celsius. So this dance floor is cooler than 500 degrees Celsius, as is this sucker, whereas that little dance floor right there's going to be hotter than 500 degrees Celsius. It's incandescent, and that means that the temperature is hot enough to give us the orange color.

ARGOW: Sherrod's boot is ignited by lava that is over 500 degrees Celsius, or over 900 degrees Fahrenheit. But in just a few minutes, he can stand on that same flow. It is now hardened rock, cooled quickly by the air. This rock is called basalt. It is characterized as an igneous rock. It has journeyed from deep inside the Earth and cooled from a molten state.

SHERROD: I can't think of a better place to visualize the formation of this planet than standing here in front of an active lava flow. This is the process by which the Earth has exuded its guts for 4.5 billions years, you might say. We've got a lot of terms here in volcanology, and perhaps the one we

throw around the most is "magma." That's melt, it's molten rock. Any molten rock that's still within the earth is magma. As soon as it comes to the surface, we just put a new name on it, we'll call it lava. Lava is flowing magma, but it happens to be flowing at the surface of the earth.