TURNOVER
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The scientist's guild had a requirement that each accredited scientist must have a beautiful assistant to ask questions. Doctor Piffelheimer's beautiful assistant was a young man named Percival Kensington. She looked him over. The cool-suit he was wearing, a necessary accoutrement against the Venusian temperature, had the advantage of being a skin-tight, form-fitting garment, padding and revealing every curve of his perfectly shaped body, down to and including the almost indecent bulge between his thighs.

The surface of Venus was almost hot enough for the rocks to glow. It was a good thing that the perfect thermal insulator had been invented, or it would have been completely impossible to send a team to Venus to answer important sci-entific questions.

Except for her assistant Percy, the surface of Venus held very little to see. One spot on the barren rock looked very much like another. Dr. Piffelheimer picked one at random and pointed. "This looks like a good spot."

Percy obediently lugged the equipment over to the spot. Fortunately the ultradrill floated on a carpet of electrostatic repulsion, and lugging the five-ton mass of the drill to the indi-cated spot required little more than guiding it with a finger in the right direction. "Explain to me what we're trying to find out from this core," he said, and cocked his head in a charm-ing tilt to listen. They must have trained him perfectly in sci-entists' assistant school; this was exactly the type of obvious question that a beautiful assistant was supposed to ask.

Piffelheimer motioned him to start the ultradrill while she expounded. The ultradrill would bore downward at a rate of 200 meters a minute. It made a racket like a herd of mating elephants while doing so, but fortunately the helmets of the coolsuits were perfect acoustic insulators as well as perfect thermal insulation, so she knew that her voice over the inter-com was flawlessly clear.

"The surface of Venus is very anomalous," Piffelheimer expounded carefully. "This was first really understood back in the last years of the twentieth century, when the primitive space probes discovered that the crater distribution was uni-form across the surface."

"What's anomalous about that?" Percy asked, completely on cue.

"Crater count indicates the age of the surface," Piffel-heimer said. "Since meteor bombardment occurs randomly at every point on the surface, a uniform crater distribution means that the surface of Venus is all precisely the same age. But, as every geologist knows, a geological surface is periodically resurfaced, by tectonic forces, by vulcanism, and the like. Vulcanism is necessary to get the heat out of the interior of the planet. So a planet cannot possibly have a surface of uniform age."

"But you just said it does."

"That's right. This is the scientific mystery, and we're about to find the answer to it."

"Oh. How are we going to do that?"

"By drilling and inserting heat-flow probes," she said. "The mystery is, how does the planet Venus release heat from the interior, if it doesn't resurface the planet through vulcan-ism?"

"Aren't there any theories?"

"Well, there is one." Piffelheimer made a face. "One wacko from the twentieth century, a scientist named Turcotte, proposed periodic, catastrophic resurfacing. Every 500 million years or so, the entire surface of Venus resurfaces all at once. The whole surface of the planet becomes one sin-gle magma ocean, and all the heat of the interior is released at once. Then, of course, it cools down, and since the whole thing was molten at the same time, every part of the surface is the same age."

"Well, that makes sense." Percy looked down at the drill controls. "One kilometer, and drilling steady. So, why don't we like that theory?"

"Because it's a catastrophic theory." Percy looked blank. Charming, but blank. "Catastrophism is anathema to geologists," Piffelheimer explained. "It smacks of religion—the hand of God wiping the planet clean. Noah's flood and such. Real geologists are uniformitarians. It's our job to show that the processes of geology are gradual and continuous." "But if this Turbot theory—" "Turcotte."

"Turcotte theory was right—" "But it's not."

"But if it was right, what causes this resurfacing?" Piffelheimer shrugged. The heat builds up. Eventually something triggers it."

"Two kilometers deep, running steady," Percy said. "How often does it resurface?"

"I told you. It doesn't." She was getting a little annoyed with the conversation, although she couldn't really blame Percy. After all, his job was to ask innocent questions. Time to change the subject. She looked around. Nothing but gray, blasted rock under them, uniform gray clouds above them. Between the gray and the gray was the clear air of the surface. "Have you looked at the horizon?" she asked. "Notice the way it seems to curve up around us, as if we were at the bot-tom of a shallow bowl."

"Yes, due to the refraction effect from the density gradi-ent of the thick atmosphere," Percy said. "If the air were clear enough, we would be able to see ourselves on the other side of the planet. We can't of course, due to Rayleigh scattering. You didn't answer my question. How often, according to Turcotte, does this resurfacing event on Venus occur?"

"Every 500 million years, give or take," Piffelheimer said, annoyed. She really shouldn't have answered the ques-tion at all, since Percy was going way beyond his job descrip-tion in pressing it in the first place, but she was so used to expounding automatically that it didn't occur to her to not answer until after she already had.

"And how long ago was the last time it happened?"

"Five hundred million years," she said.

"Then there must be a lot of interior heat waiting to get out," Percy said. "What, exactly, triggers the catastrophic release?"

Piffelheimer shrugged, annoyed. "Anything. An asteroid impact, I suppose might trigger it."

"Or maybe a drill?"

There was no need for Piffelheimer to answer him. The rock surface had suddenly split open at the site of the drilling, separating into three lines that radiated away from the drill point and streaked for the horizon. Each of the crevasses split into a network of sidecracks, which instantly fragmented still further. No doubt there was an ominous thunder accompa-nying the whole process as well, but of course the insulation muffled that. An orange glow from below lit up the clouds, and the cracks widened until the magma, welling up from below, washed over them.

Later, as they bobbed in the magma in their coolsuits, Piffelheimer had a perfect opportunity to expound on the value of perfect thermal insulation, but she decided to stay silent. Kensington probably knew it all anyway, damn him.

"If you think I'm gonna set my nice clean spaceship down in that," came the voice in her headset, "you got another thing coming."

She looked up. The expedition transport ship was hover-ing over them. As she watched, a rope (woven of refractory fibers, no doubt, since it didn't melt in the heat) fell toward them and ploiked down in the lava next to her. The correct procedure, Piffelheimer knew, is for scientist to carry beautiful assistant to safety. She glanced over at Percy, floating cheerfully on his back a few meters away, and decided, screw that. She pulled herself up the rope. Let him pull himself up.

Oh, well. After all, it had been a good day for science, and the scientists' guild ought to be justifiably

proud, she reflected. She had verified beyond any possible scientific objections a theory that had been hithertofore only a conjec-ture.

With the help of her beautiful but scatterbrained assis-tant, of course.

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About the author:

Geoff Landis is characteristically a hard SF writer, widely published in the magazines and often seen on award nomina-tion ballots, and that's where this story is coming from. It appeared in *Interzone,* where a significant amount of the best humorous SF is published these days. One of the traditional hallmarks of satire is the world turned upside down, a clever way to expose the absurdity of conventional behavior, and in this case some clunky and old fashioned SF storytelling. The third word in the story is a suspicious intrusion from conven-tional fantasy and by the end of the first sentence we know we are in the world of deadpan. This story goes to show that a heavy hand sometimes delivers the strongest blow.