Shedding Light on Dark Energy

An interview with Professor Keith Vanderlinde
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What is dark energy?

The thing that gets me up in the morning that I really want to know more about is dark energy. Almost 20 years ago now, people suddenly discovered that there’s dark energy. That 70% of the universe is something that we’ve never heard of, until 20 years ago. The idea that 70% of the universe is something that’s completely foreign to us, that we don’t even understand what it does let alone what it is, is just, that’s amazing to me. I mean, it’s exciting that I get to live at a time when we still have to figure out all this stuff. There’s this great unknown we get to go out and explore, figure out what’s actually happening.

There are a lot of theories that could explain dark energy. The main problem right now is that we just don’t have enough data. We need to find out more about what it’s actually doing before we can really say what’s causing it. To actually figure out what dark energy is doing, we need better observations of the cosmos, we need better maps of the cosmos, better ideas of what’s actually out there. So the main thing that I spend my time doing now, is building this new telescope out in Penticton, British Columbia, CHIME: the Canadian Hydrogen Intensity Mapping Experiment, which is going to map out more of the universe than anyone’s ever tried to map before. And it’s entirely so that we can get this sense of what dark energy is doing, what role it’s playing over time.

What is the purpose of your research?

Deep down studying the cosmos, trying to understand what happens on these vast scales, things that are far beyond our direct influence, a lot of it is to understand our place in the universe, to understand how we fit in, what it means that there is a reality that we exist in. They are sort of the deepest philosophical questions there are. It’s amazing that we can actually start to tackle them with data. We can start to ask these questions about how big the universe is, where it came from, where it’s going. That’s an amazing thing to me.