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'It's a big day for science and the quantum field theory'

Brian P. Schmidt shared the 2011 Nobel prize in physics for discovering that the universe's rate of expansion, far from slowing down millions of years after the Big Bang, is actually accelerating. Now, as the European Organisation for Nuclear Research (Cern) announced it could have found the 'God particle' - one of the basic building blocks of matter in the universe - Schmidt spoke with Narayani Ganesh about the discovery, its implications for understanding the nature of space - and the challenges in tracing our roots back as we accelerate forward.

Could you explain Cern's announcement that they've found a Higgs-like particle? The Higgs boson particle, proposed by Peter Higgs more than 40 years ago, is expected to clarify how the universe gets its mass - else, it would have remained as a primordial soup. The news certainly indicates that we've discovered something. It is consistent with the Higgs model. But we need to see because Cern also said it would take another three years to do more measurements and research to confirm the nature of the particle.

I would say it's a big day for science and for the understanding of the quantum field theory.

Q: Will this discovery help us understand what dark matter is? It's a tough early to tell... I'd say at this point we've seen the 'bump' but we don't know its properties yet. We could know that only after measurements are complete... or we might say it's consistent with the Higgs boson. But it may not be Higgs.

Q: What does this discovery mean for the standard model of the universe you have worked on? It is essentially consistent with the standard model, so it's really telling us the standard model is more or less correct but not necessarily complete. It may show up again that physics can say pretty amazing things...

Q: Marinus Veltman, the 1995 physics Nobel laureate, said his discovery is like closing the door on the standard model - is any more information needed to complete this now? Well, it would be nice to understand the acceleration of the universe. Closing the door means it's now a much more complete package. But it doesn't mean it's complete. We have to deal with the dark matter that constitutes more than 85% of the universe.

It would be really nice if we could learn more about the dark matter, but we have to understand what it is. Dark matter might show up in the future... we have some responses but it might show up in the future.

Q: Meanwhile, you've also noted we're losing information about the universe as we continue accelerating could you elaborate on that?

Since the universe is expanding like a balloon and we're blowing it up we are losing information because we will no longer be able to see what we are able to see now with telescopes and other instruments.