

## Nobel Laureate Brian Schmidt Observes The Transit Of Venus

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<http://www.asianscientist.com/features/brian-schmidt-observes-transit-of-venus-2012/>

*AsianScientist* (Jun. 6, 2012) - By Justin Norrie, *The Conversation* - The 6.5-hour journey of Venus across the path of the sun has enthralled thousands of Australians gathered at viewing locations to witness the event.

Nobel Prize-winning astrophysicist Brian Schmidt, a Distinguished Professor at Australian National University, observed the transit with dozens of school children and thousands of other enthusiasts at the university's Mount Stromlo Observatory.

Shortly after Venus completed its passage, Professor Schmidt spoke to *The Conversation* about the significance of the transit in recent Australian history, and its appeal to school students across the country.

**The transit has generated huge interest among amateur astronomers and the wider public. Would you say this is the sort of once-in-a-lifetime event that could captivate and enthuse school students, inspiring them to take a greater interest in science?**

It's an event that has certainly captured the imagination of Australians, many of them school students. It's given us occasion to pause and think about how astronomy has played a role in the history of Australia. And of course scientifically it's exciting because it's such a rare event.

In the 18th-century, Captain Cook and other astronomers of the day aimed to use the transit to measure the distance from the earth to the sun, and of course following on from that Captain Cook went on to complete his exploration of part of Australia. So it's integral to the history of Europeans in Australia.

I think at some level it's interesting to think about how in the 1700s we didn't know things we take for granted today – such as the distance to the sun – and to consider how ingenious humanity has been to make these advancements in science, one step at a time.

**You spent several hours this morning with school children at the Mount Stromlo Observatory. What sort of reaction did they have to this super rare occurrence?**

The kids were fascinated. The special significance of knowing that this is something Captain Cook did before them made it something they could relate to. They were witnessing what he witnessed back in 1769. That all ties together into a nice, neat story that is really quite captivating and makes the students feel like they're part of history.

**The transit helped astronomers calculate the distance of the sun from the earth almost 240 years**

**ago. Can this latest transit teach us anything new about the universe?**

It's largely symbolic this time around, but there is one area in which it's interesting. Right now, when we're looking for planets in different solar systems, one of the more powerful ways to find them – a way we're using more and more – is to look for transit planets in front of different stars. It's quite hard to synthesize exactly what those planets look like. One way is to simply observe the sun when Venus is making its transit, and try to figure out how we can best detect its atmosphere, for example.

Right now there are experiments being conducted in parts of the world to measure certain aspects of Venus' atmosphere. Of course, because we've been able to send space probes there, it's more of a technique that we can refine and apply to other stars in other solar systems that we can't reach.

Having said that, today's transit is mainly an event of historical significance. And it's something that happens only once or twice in our life, so it's exciting for that reason.

**In the scheme of major advancements in scientific knowledge throughout the ages, how important was the study of the transit carried out by Captain Cook and his contemporaries?**

Although their observations and measurements weren't as successful as they'd hoped, I would say it was a huge step forward because the distance scale of the universe is completely tied to the distance between the earth and the sun. So this being the most accurate measurement they could make at the time, it really improved our understanding of the dimensions of the universe – it told us how bright the sun was, it allowed us to calculate the gravitational constant, to calculate the masses of other planets.

That's why the British government was willing to send – at the behest of scientists – this very expensive expedition. It was a really major scientific thing to do, and it was a major contributor to how science developed, how physics developed, in the 17th and 18th centuries. So I would describe it as a fundamental move forward, one that should not be underestimated.

**There has been some cloud cover across parts of the country today. What have the viewing conditions been like?**

It's been quite breezy and cool. It started off today perfectly clear, but we've had scattered cloud coming through on occasions. Overall, though, the conditions have been pretty good here in Canberra and they've allowed for a good view of Venus across the face of the sun. I don't think anyone has been disappointed.

**This is the last transit of Venus we'll see this century?**

That's right. The next one will be in 2117. I showed a group of kindergarten kids the transit today, and they'll be about 110 years old the time the next one comes around. The chances are there may be one of them still around to see it. It depends on human longevity I suppose.

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