

“The dark side of the Universe”

Women in Physics Lecture Tour 2011

Public Lecture 3.45 pm,
Monday, 12 September 2011
Mary MacKillop College,
Carnarvon Street Wakeley NSW
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ABSTRACT: The universe is an amazing place, and our modern telescopes are giving us an unprecedented view. We can now see the universe as it was only 100,000 years after the big bang, before galaxies even existed. We have found hundreds of planets orbiting other stars and are trying to detect their atmospheres to see if there are hints of life. We regularly detect supernovae (exploding stars) that went off billions of years before the earth even formed. And we've discovered some kind of "dark energy" that is making the expansion of the universe speed up (and one day might teach us how to harness anti-gravity to make hover-boards).

Tamara will talk about these and other things she researches in her life as an astrophysicist.

Speaker Background: Dr Davis specialises in interpreting astrophysical observations in terms of their implications for fundamental physics. She performed cosmological analyses for two of the most prominent international supernova surveys in the last five years, and has now returned to Australia to work with the WiggleZ dark energy survey, making the largest ever 3D map of the distribution of galaxies in the universe. The aim of all these surveys is to understand our fundamental laws of nature, and she uses the data to test new theories of gravity and quantum physics.

She has over 30 publications, including two *Nature* papers, five papers with over 100 citations, and research into designing a new NASA space telescope. Her achievements were recognised by the Astronomical Society of Australia, which awarded her the Louise Webster Prize for early-career research (2009). In the same year she also received the L'Oréal Women in Science Fellowship, given to only three researchers across all areas of science in Australia.

Tamara enjoys making science accessible to the public and regularly gives popular talks. She's appeared several times on ABC radio, twice on Catalyst, and written two feature articles for *Scientific American*.

To top it off, Tamara has competed at a state or national level in six sports, and is a qualified ski instructor, gymnastics coach, and surf lifesaver. These days Ultimate frisbee is her sport of choice and she's just returned from the World Beach Championships in Italy, where she represented Australia for the third time.

