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2011 Women in Physics Lecture Series



## The Dark Side of the Universe

**Dr Tamara Davis**

University of Queensland

**Wednesday, 28 September 2011, 8 PM**

Physics Lecture Theatre 1, Sandy Bay Campus,  
University of Tasmania

### ABSTRACT:

Observations of the universe over the last few decades have thrown us some curve balls. We thought we had the basic picture --- the universe is expanding, and all the structure we now see formed thanks to gravity out of little over-dense clumps in the hot, dense, early universe. Well that was all true, but we've realised that that's not the end of the story. There's a dark side to the universe that we don't usually see, and it seems that everything we thought we knew makes up only 5% of the universe! Dark matter and dark energy make up the rest...

In this talk Tamara will explain why we are so certain of such a seemingly ludicrous proposition, and what we can hope to learn by studying these wild and wonderful phenomena.

### SPEAKER PROFILE:

Dr Tamara Davis is an award-winning astrophysicist with over 35 publications, including two Nature papers, five papers with over 100 citations, another that was selected amongst Nature's monthly research highlights, and has also spent time helping design a space telescope for NASA. 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.

Tamara specializes 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. Her aim is to understand our fundamental laws of nature, and she uses the data to test new theories of gravity and quantum physics.

Her achievements were recognized 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.

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 life saver. 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.

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ALL WELCOME