

University News

Dark matter movie finds worldwide audience

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Digital planetariums worldwide have snapped up a full-dome movie produced by The University of Western Australia which uses stunning simulations made inside supercomputers to explain the science around Dark Matter - the missing 80 per cent of the Universe's mass.

DARK is a 20-minute movie created by a team from the iVEC@UWA centre and the International Centre for Radio Astronomy Research (ICRAR) at UWA in collaboration with Scitech, where it is now showing at 3.45pm on weekends in the Horizon Planetarium.

Presented by brilliant young astronomer Alan Duffy, *DARK* introduces viewers to what has been described as the most pressing astrophysical problem of our time - the search for Dark Matter.

The film includes a visit to the Australian Square Kilometre Array Pathfinder (ASKAP) telescope currently being built in remote Western Australia and explains why the telescope is so well-suited to help astronomers discover the nature of Dark Matter.

Dr Duffy, a postdoctoral fellow at the University of Melbourne and an adjunct post-doctoral research associate with ICRAR, made the cutting edge simulations used in the movie during his own research into Dark Matter. He said it was highly unusual for the public to see such simulations - created inside the supercomputers at iVEC - so soon.

"What we had in mind, rather than wait the usual 5-10 years for science to kind of filter down to the general audience, was to see if we could take some cutting-edge research and present that in an easily understood way. People are seeing them essentially in the same year that I created them.

"Hopefully using the visuals we make clear a lot of these quite complex ideas such as Dark Matter and cosmology."

The simulations were turned into immersive visualisations by Research Associate Professor Paul Bourke, director of iVEC@UWA, who produced the movie along with Adjunct Senior Research Fellow Dr Peter Morse. Dr Morse, a film-maker and computer visualisation expert who works across the sciences and the arts, also directed the movie.

Professor Bourke said the movie was unusual for planetariums in that it wasn't targeted at the usual 8-14 age group and had a significant amount of filmed material rather than consisting entirely of computer graphics. He described the production as an adventure to the very edges of contemporary cosmology and data visualisation - telling a complex scientific story with a touch of humanity, for an intelligent audience.

"I find the visualisation of all that science - those massive scientific datasets - very beautiful and attractive," Professor Bourke said.

Since being completed, *DARK* has been snapped up by dozens of planetariums from India, USA, the Ukraine, UK, Italy, Russia, Spain, Malaysia, Germany, Macau, Greece, Mexico and Australia. It is being translated into a number of local languages to enable wider showings, including Russian, Italian and two Indian dialects.

iVEC is a partnership between CSIRO, UWA and Curtin, Edith Cowan and Murdoch Universities, supported by the WA Government. It has facilities with supercomputing infrastructure at three locations, including the Fornax supercomputer at iVEC@UWA.

ICRAR is a joint venture between UWA and Curtin University aimed at achieving research excellence in astronomical science and engineering.



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Media references

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