



In a galaxy far, far away, the hole story

By **BRIDIE SMITH**
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ASTRONOMERS have found one of the biggest black holes yet – a super dense object residing in an “oddball galaxy” 240 million light years away.

The black hole is equivalent in mass to 17 billion suns, making it the second-largest black hole documented. The largest, found last year in a galaxy called NGC 4889, was equivalent in mass to 21 billion suns.

But it's not just the mass of the black hole that has astronomers excited. Unusually, this ultramassive black hole has a mass equivalent to 59 per cent of the mass of its galaxy's central

stars. On average it is usually 0.1 per cent.

“We don't know how it formed to become this big relative to its host galaxy, but it is certainly unique,” said Alister Graham, professor of astronomy from the Centre for Astrophysics and Supercomputing at Swinburne University.

“Given the size of its black hole, we would expect this galaxy to be 100 times brighter and much larger than it is,” he said.

Professor Graham said that the stars in the galaxy – known as NGC 1277 – were about 8 billion years old, and the black hole older still.

The discovery of the black hole was made by researchers from America and Germany using the largest optical telescope in the world, the Hobby-Eberly Telescope, at the University of Texas at Austin's McDonald Observatory.

Astronomers were able to measure the motion of the stars at the centre of the galaxy, which reveals the mass within the orbit of the stars.

“This is a really oddball galaxy,” said team member Karl Gebhardt, of the University of Texas at Austin. “It's almost all black hole.”