

## Ordinary black hole unearthed

Posted on Wednesday 6th June 2012

Scientists from the University of Birmingham have discovered evidence of an ordinary black hole in the Centaurus A galaxy, more than 12 million light years away. Leading an international team of astronomers, the researchers have detected a 'garden variety' black hole for the first time outside the immediate neighbourhood of our galaxy.

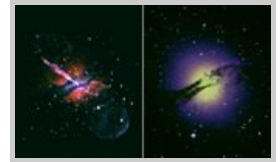
Black holes do not emit any light which makes them notoriously difficult to detect and as 'garden variety' black holes are not supermassive, they require excellent data for detection. Using observations from NASA's Chandra X-ray observatory, which is currently orbiting the earth, a team belonging to the University's Astrophysics and Space Research group detected a point-like X-ray source 50,000 times the brightness of our sun. Over the two month span of the observations, the source faded by a factor of 100 in brightness.

Lead author, Mark Burke, PhD student at the University of Birmingham explains: *'Celestial sources don't vary so dramatically over such short periods of time. We were able to show by measuring the temperature and power of the source, and the way it varied, that this could only happen if a black hole is the cause of this phenomenon.'*

Dr Somak Raychaudhury, Reader in Astrophysics at the University of Birmingham, who supervised this project, adds: *'Finding an ordinary black hole in other galaxies shows that our own galaxy, the Milky Way, isn't peculiar, and it paves the way for us to start looking for potential black holes elsewhere, starting with hundreds of bright X-ray sources that we have observed in the Centaurus A galaxy.'*

The research, A Transient Sub-Eddington Black Hole X-ray Binary Candidate in the Dust Lanes of Centaurus A, M. Burke et al, is published in the April issue of Astrophysical Journal and can be found online here:

<http://arxiv.org/abs/1202.3149> (<http://arxiv.org/abs/1202.3149>).



X-ray

image on left and the optical DSS image on right shows the position of the black hole inside Centaurus A.