



Black Holes at Work

Professor Andy Fabian, OBE, FRS

Institute of Astronomy, University of Cambridge

Monday 6th February 2017

Wolfson Lecture Theatre, Churchill College,
Storey's Way, Cambridge, CB3 0DS

Event Information

Membership: You can join CSAR online at csar.org.uk; or at the reception desk in the lecture theatre foyer before the talk. Postgraduate and undergraduate student membership of CSAR is free of charge.

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Location: Wolfson Lecture Theatre, Churchill College, Storey's Way, Cambridge, CB3 0DS

Refreshments: Coffee and biscuits are available in the Wolfson Foyer from around 7pm. Before lectures, attendees are welcome to use the college canteen for dinner (from 5:45pm) and, after lectures, the bar. Cash can be used at both.

Car parking: Attendees may park in the Senior Car Park on Churchill Road off Storey's Way. More parking is available further along Churchill Road, and in the Möller Centre at the far end.

Andy writes:

Although physically very small, black holes can decide the fate of galaxies. They have only two properties, mass and spin, with masses that range from a few times the mass of the Sun to over ten billion times that mass. Just about all galaxies have a supermassive black hole at the centre, with a mass proportional to that of the central spheroidal bulge of stars. In the case of the most massive galaxies this bulge corresponds to the total stellar mass. The correlation can arise because massive black holes, in accreting gas from the host galaxy, emit enough energy in radiation, winds and jets to expel all the gas from the galaxy and thereby shut off star formation as well as the accretion. Unless more gas comes along, the galaxy is effectively red and dead. In other words, the final stellar mass of a galaxy is determined by the black hole at its centre, even though the black hole is only one billionth of the size of the galaxy. How this happens will be illustrated and discussed.

Andy Fabian is Acting Director of the Institute of Astronomy and researches black holes and clusters of galaxies using orbiting X-ray telescopes such as Chandra, XMM and NuSTAR. He is a Fellow of the Royal Society and a Foreign Associate of the US National Academy of Sciences. He was President of the Royal Astronomical Society from 2008-2010 and was Vice-Master of Darwin College from 1997-2012. He has been awarded the RAS Gold Medal and the Bruno Rossi and Dannie Heineman prizes of the AAS.

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