

## PHYSICS AND ASTRONOMY COLLOQUIUM

## Dr. Norbert Werner

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## "The Hot Universe and the Use of CubeSats in Monitoring the High-Energy Sky"

## Abstract

Most of the ordinary matter in the Universe has not been converted into stars but is in the form of a hot atmospheric gas permeating the gravitational potentials of massive galaxies, groups and clusters of galaxies, as well as the filaments of the cosmic web. These hot atmospheres are often stabilised by black hole feedback and, in many ways, are of key importance for the evolution of their host galaxies.

I will review recent observational results on the coevolution of early type galaxies, their hot X-ray emitting atmospheres and central supermassive black holes. In the last part of my talk I will summarise our activities towards building a network of CubeSats for the monitoring of gamma-ray bursts, some of which are the electromagnetic counterparts of gravitational wave signals.

Wednesday, September 11, 2019 3:30 p.m. Bob Wright Centre A104