BOSTON UNIVERSITY

Boston University College of Arts & Sciences
Institute for Astrophysical Research

2018 - 2019 ASTROPHYSICS SEMINAR SERIES

The Continuing Mystery of Multiple Spectral Components in Jets from Black Holes

One of the first things that astronomers usually determine for any new astrophysical source class is the emission process generating the radiation -- thermal, synchrotron, inverse Compton, Bremsstrahlung, etc. Identifying these processes is critical to using the EM observations to probe the physical environments of very distant objects. Despite the fact that jets from black holes were first understood to exist over 40 years ago, we are still in ignorance about many primary aspects of these systems -- including the radiation mechanism at high energies, the particle makeup of the jets, and how particles are accelerated, possibly to energies as high as 100 TeV and hundreds of kpc from the central engine. I will discuss how this mystery first really got going with the launch of Chandra in 1999, and show how high-resolution observations with observatories like Hubble and ALMA have continued to add pieces to the puzzle -- sometimes seemly solving a problem, and other times opening a new one. I will conclude with some perspectives on how new observatories, like the Chandra successors AXIS and Lynx, can help us solve these long-open questions in jet physics.

Monday, April 22nd
3:30 - 4:30 p.m.
725 Commonwealth Avenue | Room 502

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