复旦大学物理系 物质科学报告

Time: 2:00pm, Tuesday, 2018.5.15

Location： Physics Building(Jiangwan), Room C108

Black Holes Big and Small: Impact on Galaxy Evolution

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Supermassive black holes (BHs) have been found in almost 100 galaxies by dynamical modeling of spatially resolved kinematics. The Hubble Space Telescope revolutionized BH research by advancing the subject from its proof-of-concept phase into quantitative studies of BH demographics. Most influential was the discovery of a tight correlation between BH mass and velocity dispersion of the bulge component of the host galaxy. Together with similar correlations with bulge luminosity and mass, this led to the widespread belief that BHs and bulges coevolve by regulating each other's growth. I present a major update to the status of this field. I will discuss (1) how BH mass correlates tightly only with classical bulges and ellipticals, (2) how the zero point and slopes of the fundamental correlations need to be revised, (3) BH mass estimates in quasars, (4) the discovery of intermediate-mass BHs in dwarf galaxies and implications for quasar seeds, (5) quasar-mode energy feedback at high redshifts, and (6) the evolution (or lack thereof) with time of the BH-host galaxy scaling relations.

Luis C. Ho (何子山)：

Education and Employment

2014-Present Director, Kavli Institute for Astronomy and Astrophysics
2014-Present University Chair Professor, Peking University
2013-Present Distinguished Research Fellow, National Astron. Observatory, CAS
2012-Present Associate Editor, The Astrophysical Journal Letters
1998-2013 Staff Astronomer (Full Professor), Carnegie Observatories
1995-1998 Harvard-Smithsonian Center for Astrophysics Postdoctoral Fellow
1995 Ph.D. Astronomy, University of California at Berkeley
1991 M.A. Astronomy, University of California at Berkeley
1990 B.A. Astronomy and Physics, Harvard University

Positions

2018-Present Associate Editor, Science Bulletin
2013-Present Editorial Committee, Annual Reviews Astronomy and Astrophysics
2016-Present Advisory Committee, Southern University of Science and Tech.
2016-Present Advisory Committee, FAST 500m Radio Telescope, NAOC
2016-2017 Science Advisory Committee, Chair, Chinese 12m Telescope
2015-Present Board, East Asia Observatory
2015-Present Advisory Committee, Chinese Academy of Sciences
2015-Present Advisory Committee, Academia Sinica, Inst. Astron. Astrophys.
2015-Present Advisory Committee, Chair, Key Lab Optical Astronomy, NAOC

Research Activities

My research covers a number of different, but interrelated areas, using all available observational techniques ranging from radio to X-ray energies. The main topics of my recent work include: (1) physics of active galaxies, including excitation mechanism of emission-line regions, accretion disk models, and jets; (2) search for massive black holes, from star clusters to the centers of galaxies; (3) black hole - galaxy connection; (4) galaxy structure and the origin of the Hubble sequence of galaxies; (5) interstellar medium.

Publication Record and Other Activities

My research has resulted in 629 publications, among them 405 papers in refereed journals and 9 books. My papers have over 35,000 citations; my h-index is 90. I serve on numerous national and international advisory committees. Over the past few years I have organized nearly 50 major scientific meetings world-wide, and I have given over 170 invited talks and lectures. I have also been very actively involved, in different capacities, in helping to develop astronomy throughout China and East Asia, including the planning of current and future large telescopes and instruments. Since 2014, I have moved to China to serve as Director of the Kavli Institute for Astronomy and Astrophysics at Peking University, where I am also University Chair Professor. I am supported by the Thousand Talents Program and am leading key projects supported by NSFC and MOST.