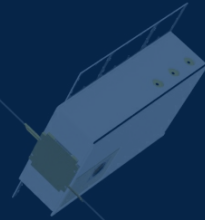


# Investigating Medium-Sized Black Holes



Philip Kaaret  
Professor, Physics and Astronomy



## CURRENT RESEARCH

### Building instrumentations to probe into black holes

We have come far in black hole research, but there is much still to discover. We know that there are "stellar-mass" black holes, formed when a star collapses at the end of its life, and "supermassive" ones found in the cores of galaxies. But, is there anything in between? Do intermediate-mass, or "medium-sized" black holes exist? Did you know that while black holes suck everything in, they also power some of the most luminous objects in the universe and may have helped make the universe transparent? Dr. Philip Kaaret, Professor of Physics and Astronomy at the University of Iowa, addresses fundamental questions about black holes focusing on the search for medium-sized black holes that exist and also studying what effect the first black holes formed from the first stars had on the early universe. Building instrumentation for the X-ray and gamma-ray bands and conducting observations of black holes at X-ray, gamma-ray, optical, and radio wavelengths, he is advancing astronomical research on all fronts and shedding light on important principles of the universe.

Collaborating with researchers at NASA's Goddard Space Flight Center in Greenbelt, MD, and with researchers at the Harvard-Smithsonian Center for Astrophysics in Cambridge, MA, Dr. Kaaret's robust team of undergraduate and graduate students is a world leader in the search for medium-sized black holes and one of only a few groups in the world studying the impact of stellar-mass black holes on the early universe. In order to examine some of the most exotic and mind-bending objects known, Dr. Kaaret is building a CubeSat-based X-ray telescope. This compact and low-cost observatory would have a major impact on the field and could energize a whole new generation...

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## AFFILIATION

University of Iowa

## EDUCATION

- Ph.D. in Physics 1989, Princeton University
- S.B. in Physics 1984, Massachusetts Institute of Technology

## AWARDS

- Fellow in Astronomy, American Association for the Advancement of Science, 2007
- Faculty Scholar, University of Iowa, 2005-2008

## RESEARCH AREAS

Technology, Space, Materials Science / Physics, Space

## FUNDING REQUEST

Your contributions will support Dr. Philip Kaaret and his team at the University of Iowa as they develop instruments to probe into the universe and the black holes. Donations of \$10K/year can acquire hardware for CubeSat-based instruments, while up to \$3M can help build a full X-ray observatory (that could be appropriately named). A postdoc working on data analysis could be funded at \$120K/year. Support at any level between these extremes would help advance the program; a position funded for three years could be named in honor of the donor!