



Annual Report on Program Learning Outcomes Assessment

Program: *PhD in Astronomy*

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1. List the learning outcomes for the program:

- *Demonstrate graduate level knowledge of astronomy, including the following topics:
 - a. *Fundamental Physics and Astrophysics; topics include Gravitation, Electromagnetism, and Quantum Mechanics appropriate to astronomy, and Dynamical behavior of space and astrophysical plasmas;*
 - b. *Observational techniques used to study astronomical and space phenomena.**
- *Ability to communicate astronomical information both in written and oral form to a graduate and faculty level audience.*
- *Experience in critical thinking about astronomical topics as well as other technical and general scientific topics.*
- *Understand ethical issues in scientific and academic disciplines.*
- *Develop an understanding of the forefront of scientific research in a specific discipline.*
- *Perform original research within that discipline.*
- *Present original research to a committee of faculty members and to a scientific audience.*
- *Publish original research in a thesis and also, typically, peer-reviewed Journals*